

# MANUFACTURERS' RECORD

A WEEKLY SOUTHERN INDUSTRIAL  
RAILROAD AND FINANCIAL NEWSPAPER.

## THOUGHTS FOR THANKSGIVING.

The advance of two and a-half cents per pound in the price of cotton during the past nine weeks means a gain to the Southern planters of \$87,500,000 in the actual cash value of a single staple crop.

The increase in the sugar crop of this season will give to the South \$2,250,000 in bounty alone more than was received last year. The rice crop of this season is the largest ever grown in the South.

The 2,500,000 acres withdrawn from cotton this season have been planted with food crops, chiefly corn, thereby making the South more self-reliant and increasing the cash by keeping it at home instead of sending it West for food.

Bankers, merchants, manufacturers, farmers and the newspapers speak with one accord of the prosperity that not only awaits the South, but already is present. Confidence never was greater; business conditions never were more favorable.

THE FULL TABLE OF CONTENTS WILL BE FOUND ON PAGE 318.

\$4.00 per year.  
Single Copy  
10 Cents.

VOL. XXII.  
No. 17.

Baltimore, November 25, 1892.



## THE JAMES SMITH WOOLEN MACHINERY CO.

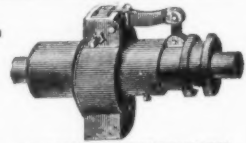
WOOLEN MACHINERY AND CARD CLOTHING OF EVERY DESCRIPTION,  
SHAFTING, HANGERS, PULLEYS AND FRICTION CLUTCHES.

Hub Friction Clutch Pulleys will run 1,000 Revolutions.

411 to 421 Race Street,

Made in sizes from 2 up to 1,000 horse-power.  
More than ten thousand in use.

PHILADELPHIA, PA.



FRICTION CUT-OFF COUPLING.

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"RECENT IMPROVEMENTS IN AIR COMPRESSORS,"  
"RECENT IMPROVEMENTS IN ROCK DRILLS,"

mailed free to any one who will cut out this advertisement and mail it to us with his name and address.

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MANUFACTURERS AND SOLE PROPRIETORS OF THE PATENTS, APPLICATIONS AND DESIGNS UNDER WHICH THE BROWN HOISTING AND CONVEYING APPARATUS AND VARIOUS TRAMWAYS FOR IT ARE BUILT.

NEW AND COMPLETE LABOR-SAVING SYSTEMS FOR HANDLING OF MATERIALS OF ALL KINDS. MACHINERY SPECIALLY ADAPTED FOR HANDLING PHOSPHATE.

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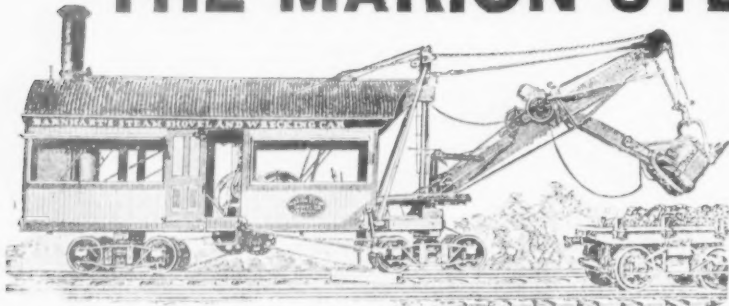
Sewer Machine Tramway System.

Continuous Elevated Tramway System

THE FAYETTE-BROWN PATENT AUTOMATIC FURNACE HOIST.

## THE MARION STEAM SHOVEL CO.

MANUFACTURERS OF

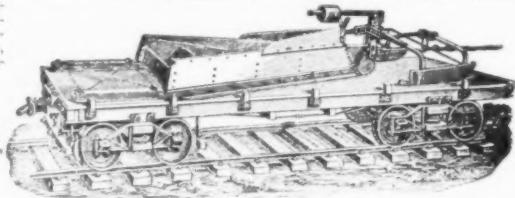


Barnhart's Steam Shovels, Dredges, Ditching Dredges, Railroad Ditchers, Wreckers, Ballast Unloaders, &c. Our Steam Shovels are largely used on Railroads and by Contractors, Brick Manufacturers, and in excavating Iron Ore, Handling Stock Ore, Stripping Coal Fields and Stone Quarries, and are a guaranteed to give entire satisfaction; otherwise may be returned at our expense. For illustrated Catalogue, Photographs, and any further information desired, address

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## Highest Grade Saws

Also Dealers in Saw Mill Specialties.

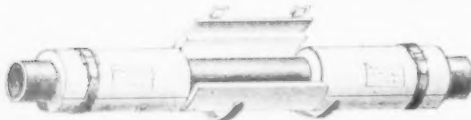
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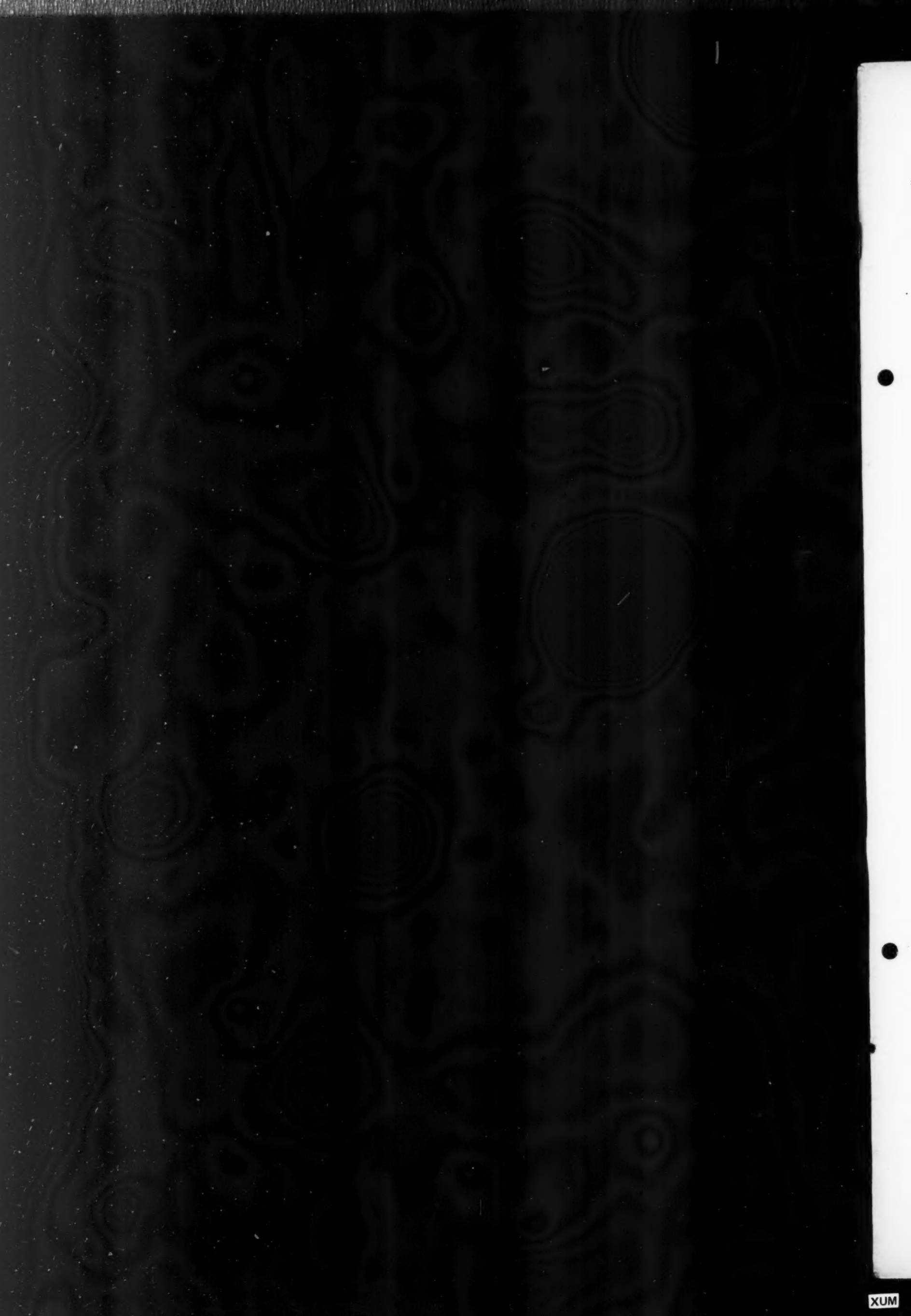
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## CLASSIFIED INDEX OF ADVERTISERS.

FOR "ALPHABETICAL INDEX" SEE PAGE 46.

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Charleston Lead Co., Charleston, S. C.  
Herman Poole, New York, N. Y.  
Valk & Murdoch Iron Works, Charleston, S. C.

**Air Compressors.**

M. C. Bullock, Mfg. Co., Chicago, Ill.  
Ingersoll-Sergeant Rock D. Co., New York, N. Y.  
Morris Machine & Iron Co., Dover, N. J.  
Rand Drill Co., New York, N. Y.  
Sullivan Machinery Co., Chicago, Ill.

**Anti-Friction Metals.** [See *Phosphor-Bronze.*]

Paul S. Reeves, Philadelphia, Pa.  
Amer. Imp. Anti-Friction Metal Co., Mobile, Ala.

**Architects.**

Collins & Hackett, Staunton, Va.  
Edward Barrath & Co., Chicago, Ill.  
Teague & Mayre, Newport News, Va.  
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Gustaf Bottiger, Winston, N. C.  
D. G. Zeigler, Charleston, S. C.  
Charles H. Read, Richmond, Va.  
Wilson & Huggins, Roanoke, Va.  
Griswold & Nunan, Owensboro, Ky.  
C. R. Makepeace & Co., Providence, R. I.  
Lockwood, Greene & Co., Boston, Mass.  
Drew, Baldwin & Co., New York, N. Y.

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Covington Machine Co., Covington, Va.  
E. M. Hopkins, Savannah, Ga.  
Toledo Wire & Iron Works, Toledo, O.  
Toledo Cornice Works, Toledo, O.  
Cushman Iron Co., Roanoke, Va.  
Champion Iron Co., Kenton, O.  
J. E. Bolles & Co., Detroit, Mich.  
Fred. J. Meyers Mfg. Co., Covington, Ky.  
T. H. Brooks & Co., Cleveland, O.  
P. Duvinage & Co., Brooklyn, N. Y.

**Artesian Well Tools and Supplies.** [See *Well Tools and Supplies.*]**Babbitt Metal.** [See *Anti-Friction Metal.*]**Bankers and Brokers.**

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Hopkins, Dwight & Co., New York, N. Y.  
Edward Morton & Co., New York, N. Y.  
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von Hemert & Co., Roanoke, Va.  
John L. Williams & Son, Richmond, Va.  
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E. & B. Holmes, Buffalo, N. Y.

**Bath Tubs.**

Haines, Jones & Cadbury Co., Philadelphia, Pa.

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Cameron & Barkley Co., Charleston, S. C.  
Henry Popham & Son, East Newark, N. J.  
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Chesapeake Belting Co., Baltimore, Md.  
Gandy Belting Co., Baltimore, Md.  
Shultz Belting Co., St. Louis, Mo.  
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**Boilers.** [See *Machinery.*]

Aultman & Taylor Machinery Co., Mansfield, O.  
S. C. Forsaith Machine Co., Manchester, N. H.  
Delbert Engineering Co., Ltd., New Orleans, La.

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Geo. J. Fritz, St. Louis, Mo.  
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Cleveland & Hardwick, Erie, Pa.  
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W. R. Burgess, Sanford, Fla.  
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Gates Iron Works, Chicago, Ill.  
American Ore Machinery Co., New York, N. Y.  
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Penberthy Injector Co., Detroit, Mich.

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H. Ward Leonard & Co., New York, N. Y.  
S. D. Warfield Co., Baltimore, Md.  
Rockford Electric Mfg. Co., Rockford, Ill.  
Smith, Saunders & Collins, Newton, N. C.  
General Electric Co., New York, N. Y.  
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H. Ward Leonard & Co., New York, N. Y.  
S. W. Frescoln, New York, N. Y.  
General Electric Co., New York, N. Y.

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W. J. Williams, Dallas, Texas.

Wt. 20 tons  
Cap. 1500  
cubic yards  
per day.

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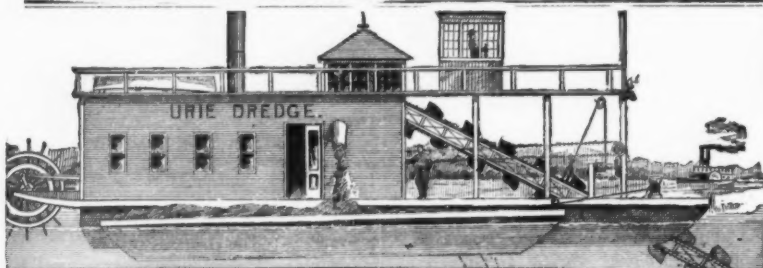
The "LITTLE GIANT EXCAVATOR"  
Especially well adapted for all contract work



Write for  
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Matter.

Toledo, O. U. S. A.  
Manufacturers of  
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Excavators.  
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Weight 40 tons, ca-  
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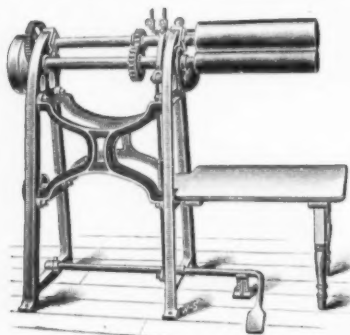
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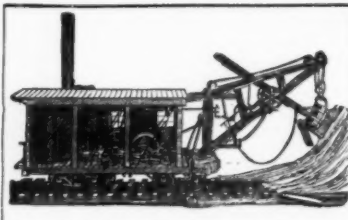
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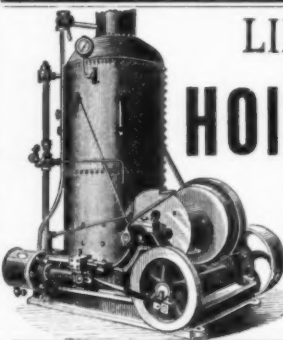
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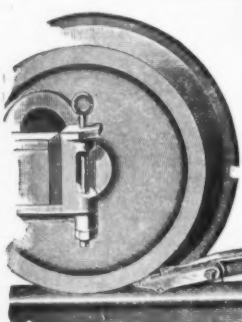
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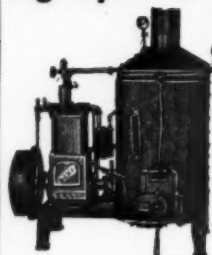
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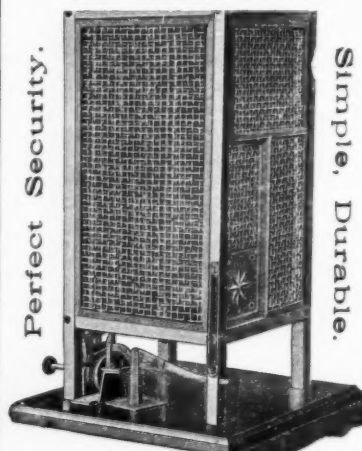
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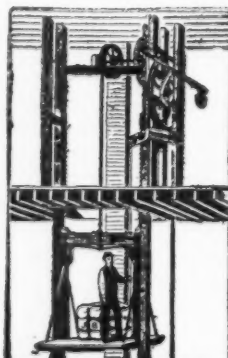
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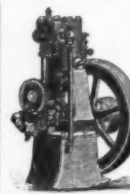
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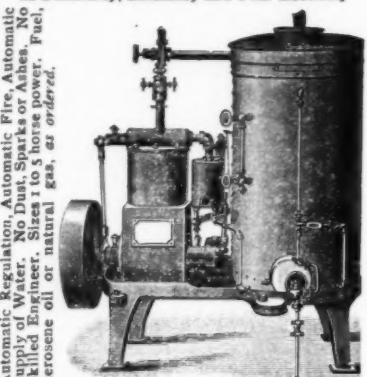
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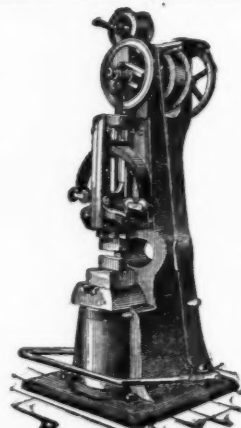


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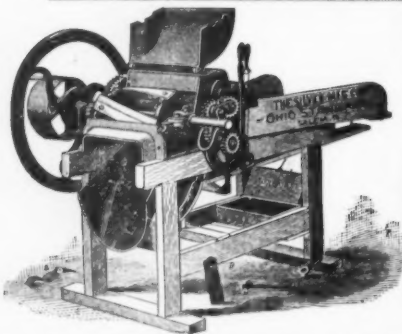
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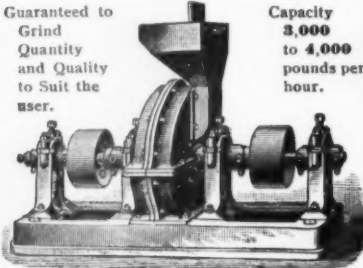
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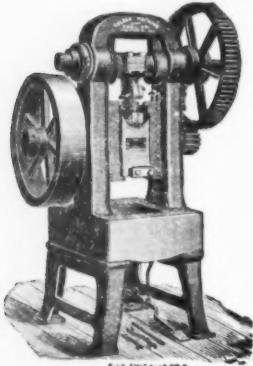
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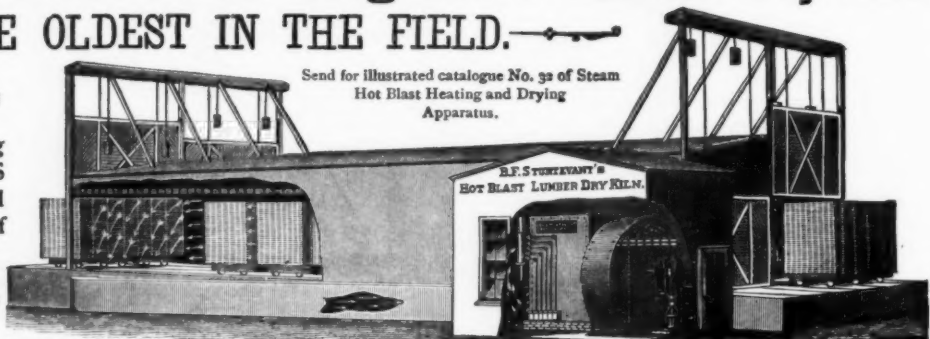
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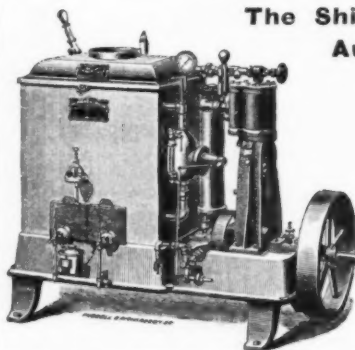
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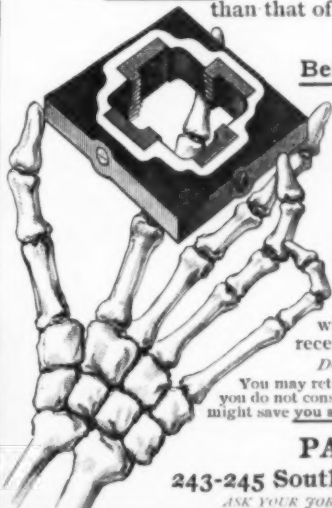
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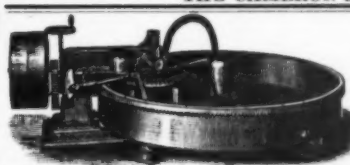
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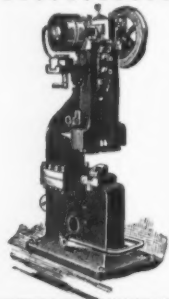
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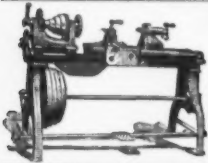


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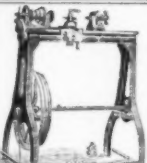
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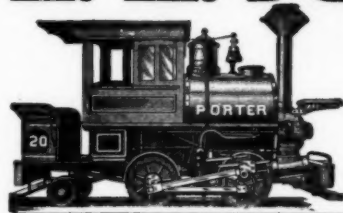
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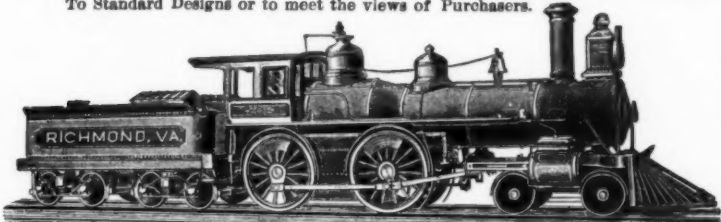
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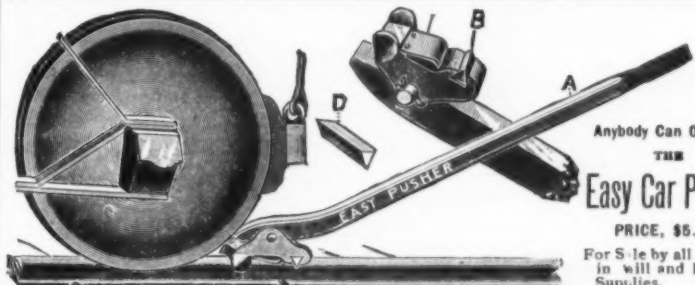
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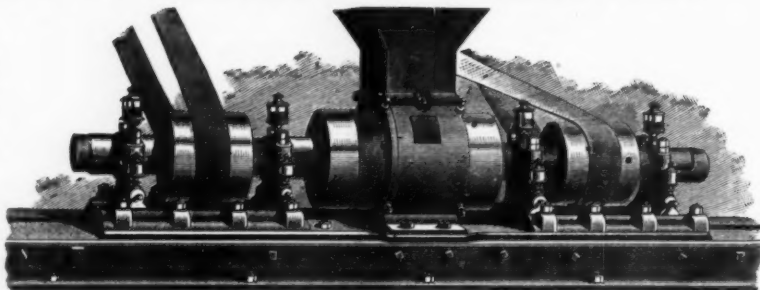
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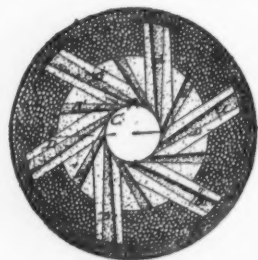
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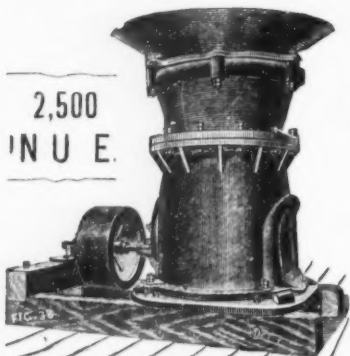
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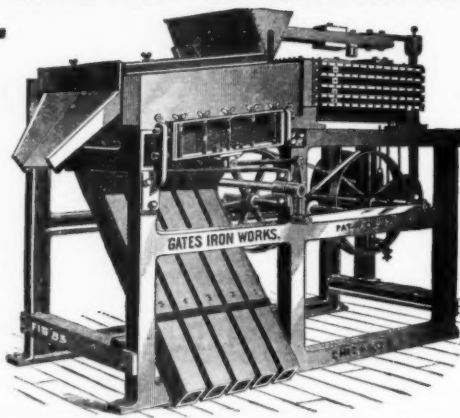
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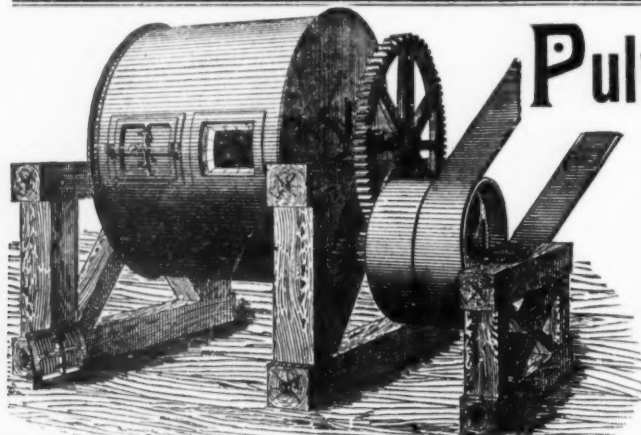


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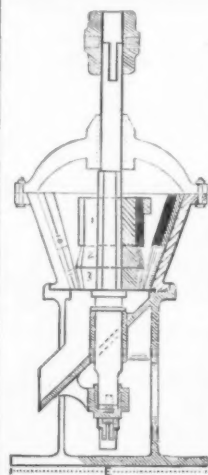
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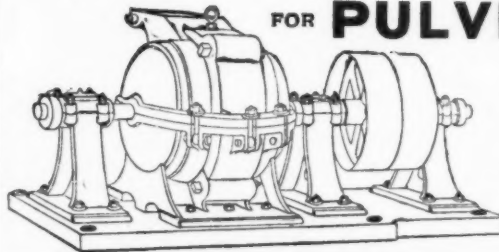
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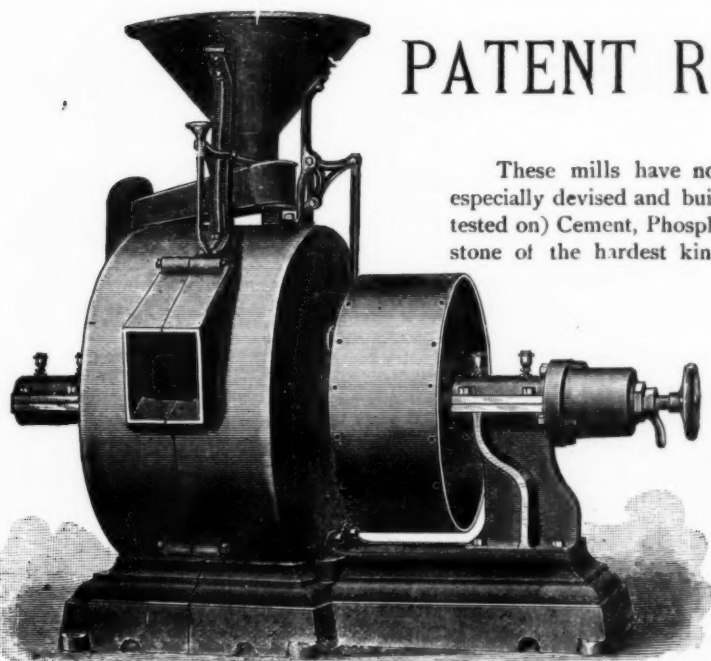
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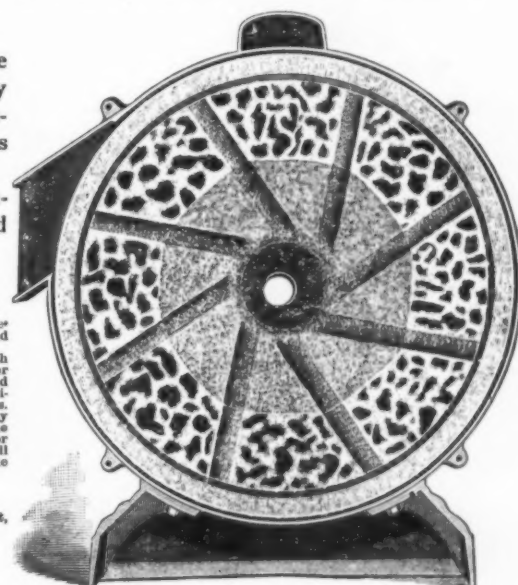
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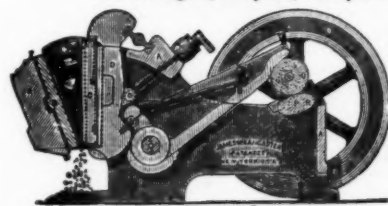
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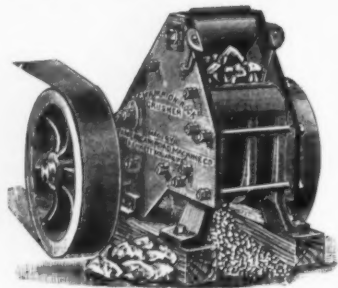


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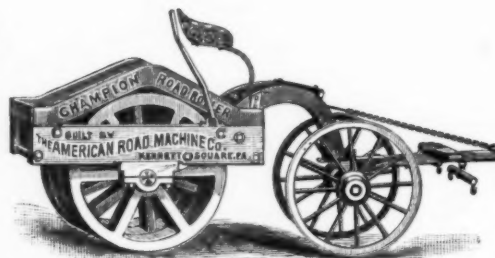
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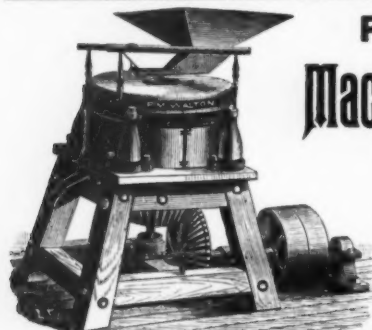
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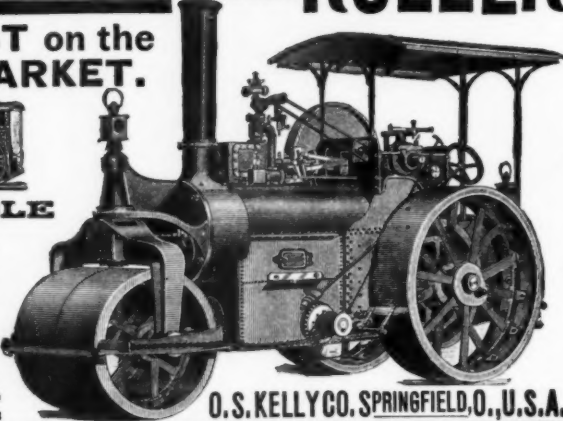
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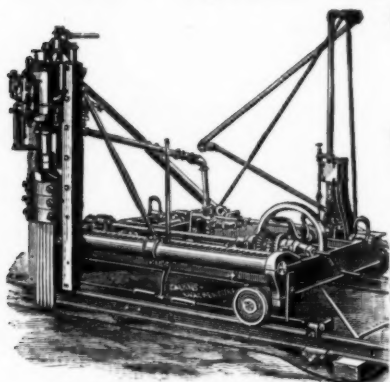
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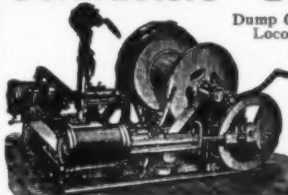
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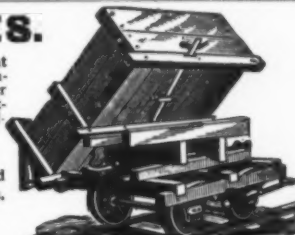
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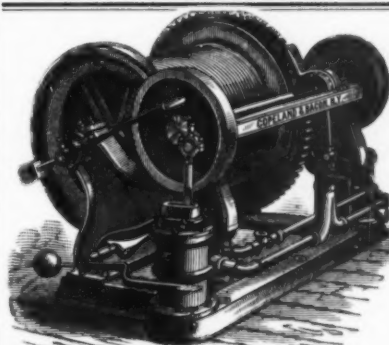


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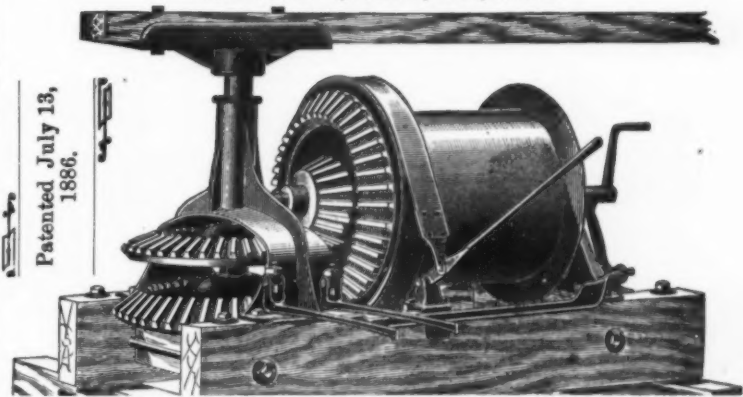
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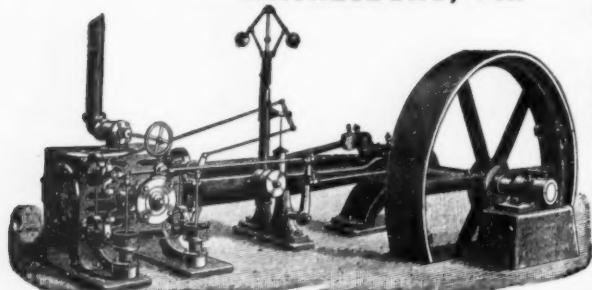
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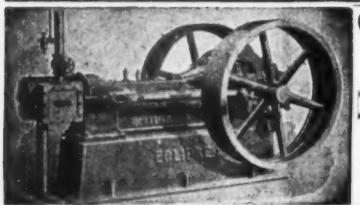
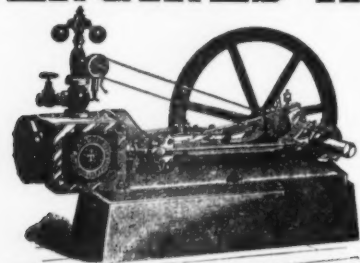
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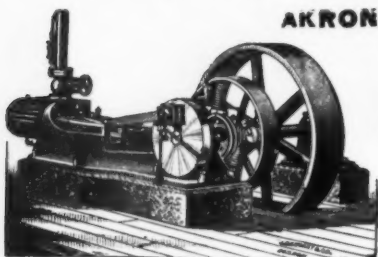
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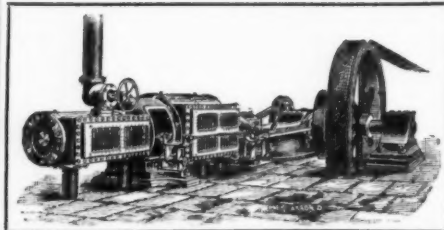
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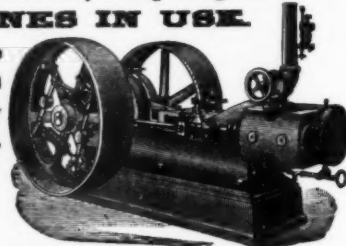
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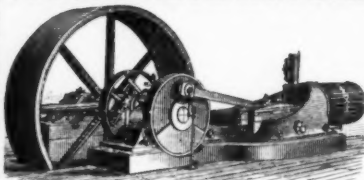
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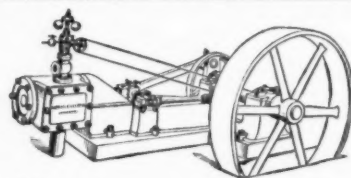


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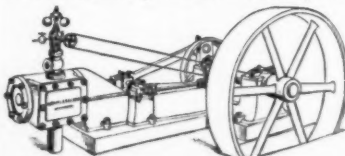
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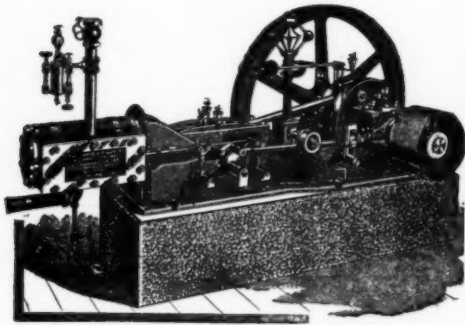
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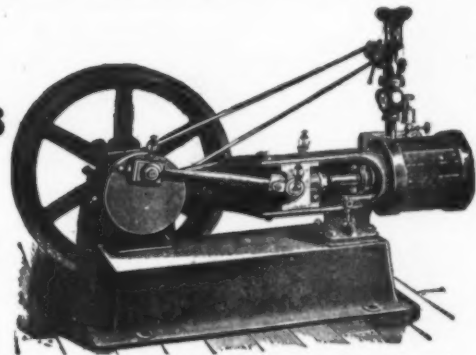
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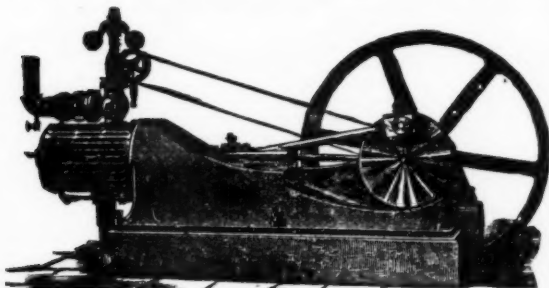
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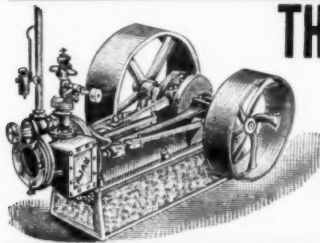
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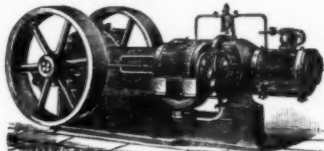
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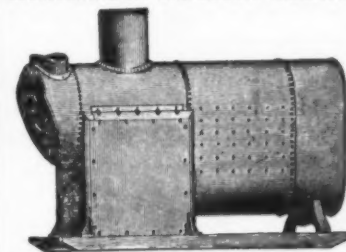
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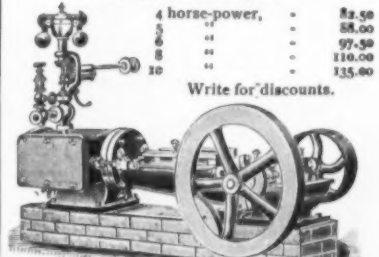
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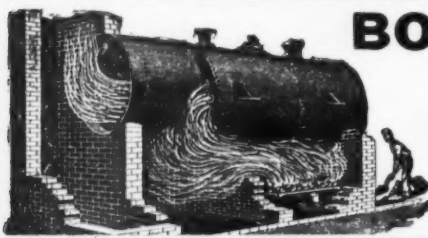
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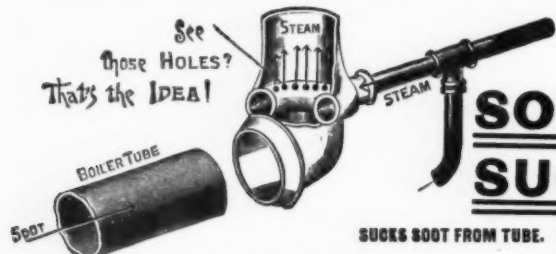
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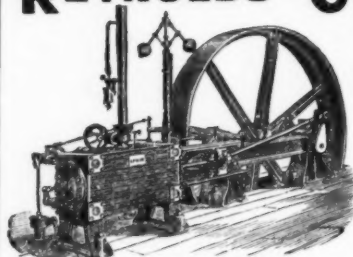
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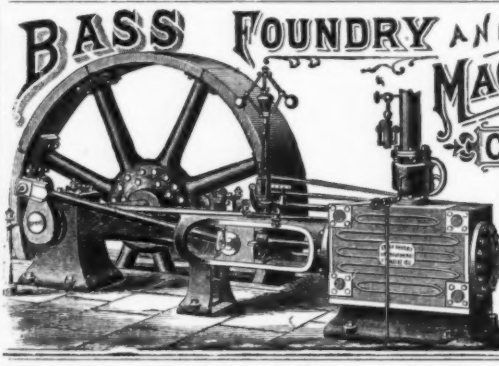
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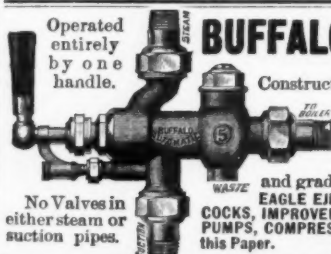


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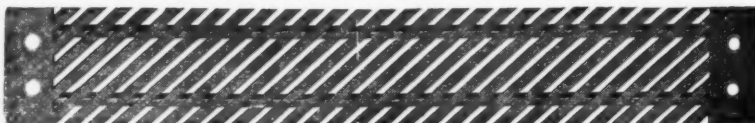
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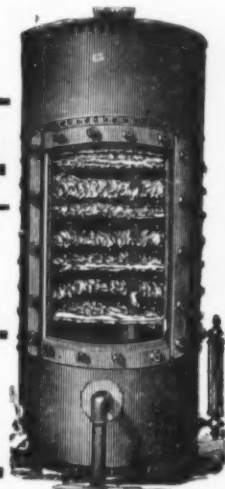
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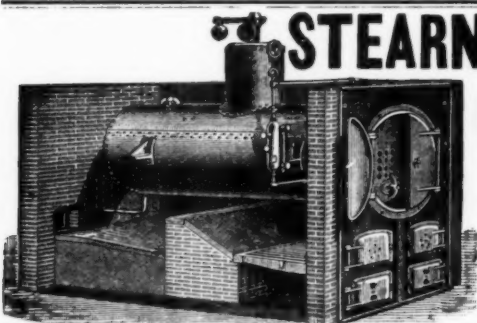


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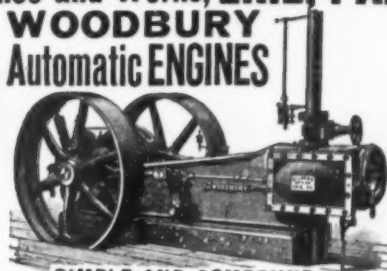
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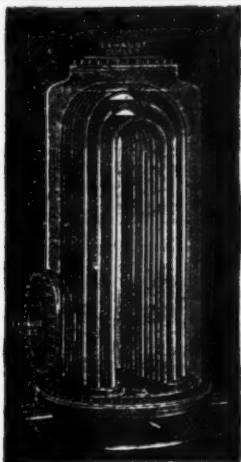
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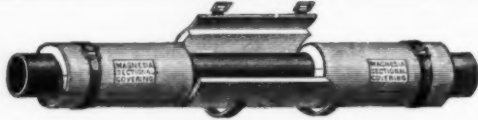
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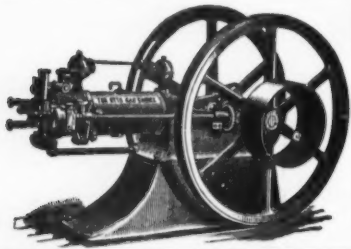
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[Name Patented 1889.]

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER.

VOL. XXII. No. 17.  
WEEKLY.

BALTIMORE, NOVEMBER 25, 1892.

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## NEWSPAPER OPINIONS OF THE SOUTHERN OUTLOOK.

### Present Conditions and Future Prospects as Reflected by the Southern Press.

We present below a collection of opinions concerning the outlook in the South which we have gathered from the Southern newspapers. Inasmuch as the papers are in close touch with the people, the views expressed may be taken as representing the generally prevailing sentiments of the great mass of the people. We present these views not on account of the political opinions they express, but because of their significance from a purely business standpoint. As such they carry much weight and are entitled to consideration.

#### Millions of Dollars for Georgia. [Savannah Morning News.]

The belief is quite general among the Southern people that the Southern States are about entering upon the greatest period of prosperity they have ever known. In this State the signs of a growing confidence that better times are at hand are unmistakable.

A few days ago Governor Northen said he had reason to believe that millions of dollars of outside capital would soon be invested in enterprises in the State, and there are movements looking to the bringing in of the better class of immigrants. Mr. C. J. Haden, of Atlanta, is now engaged in preparing a pamphlet giving a vast amount of information relative to Georgia and her resources. This pamphlet he intends to distribute throughout England and Germany.

If once the tide of immigration is turned in this direction it will not be very long before the vast area of unoccupied lands in Southeast and Southwest Georgia will be taken up by thrifty immigrants who will make for themselves comfortable homes where there are now only unbroken forests and unexplored swamps.

#### All Eyes on the South. [Galveston Mirror of Commerce.]

Wherever one goes in the North there is heard the same oft-repeated inquiries as to the state of business in the South and the possible chances offered by this section to settlers. Everywhere it is apparent that the eyes of hundreds, yes, thousands, are on the South, and that information from this section of value to those contemplating a removal here is eagerly sought for. The South is generally regarded now as offering the best opportunities to those desirous of improving their condition. The results of this state of feeling will soon be apparent if the Southern States take proper steps to let these people know just what they offer.

#### An Era of Prosperity and Happiness. [From the annual message of Governor Jones, of Alabama.]

Fear of hostile congressional legislation, imperilling our institutions and destructive alike of our peace and prosperity, no longer disturbs the pathway of our daily vocations. Federal taxation, which stood between industry and its profits and fastened an insidious servitude upon our agricultural and industrial classes, has at last

been overthrown to give place to a reign of wiser and more benignant laws. Sectionalism, in all that is unwise and harmful, is dead. We are entering upon a new and better era of happiness and prosperity.

#### Encouraging Reports from the South. [Bradstreet's, November 19.]

There is a more cheerful tone to nearly all reports from Southern cities. New Orleans reports cotton one cent higher, sugar active and rice in free movement, with an upward tendency to prices. Now that the strike has ended, lower temperature alone is needed to greatly stimulate distribution. These conditions to some extent characterize Atlanta, Birmingham, Charleston and Richmond, where the volume of business has increased and collections have improved. Like reports come from Nashville and from Memphis, while Baltimore, which does a large trade with the South, sends word that while the season's consumption of staples has been small, an improved business for spring trade is expected. Business collections are generally fair.

#### "Everything Is Coming Our Way." [Greenville (S. C.) News.]

The results of Tuesday mean much more to the South than mere political advantage. They mean the lifting from us of the shadow of the force bill and promise of a long period of peace and opportunities for progress and prosperity.

The South began to boom in 1884. She boomed splendidly until two years ago. Now let her boom again. Let every man lay hold with hopeful heart and willing hands and rush things right along. Everything is coming our way now.

If a Democratic Congress will give us lower duties to cheapen prices and improve the currency conditions so as to relieve us of the fear of panics, we need ask no more. We can look with confidence for flush times and prosperity as sound as rapid. The solid South will boom gloriously if the men of the solid South will move to make her do it.

#### Texas Turned Loose. [Austin Statesman.]

Texas offers such advantages of investment that will be availed of by shrewd business men, and the State will stretch forth her arms as a mighty giant, and gathering in the machinery to start the wheels of enterprise, she will move on to the most astonishing prosperity and greatness in the commercial, manufacturing and agricultural departments of industry.

Nothing in the world can prevent this but prohibitory and suicidal laws, and the people of Texas have too much sense and too high a regard for their own interest to blight her prospects by any more restrictive or illegal legislation.

#### The Tide of Development Southward. [New Orleans Picayune.]

Now, look out for an era of great material development in the Southern States.

That the Southern States of the Union are incomparably rich in natural resources is a fact that cannot be controverted. In

coal, iron, timber, building stones and other natural material the resources are practically inexhaustible and almost untouched, while the soil that produces all the cotton, sugar and rice, and is capable of competing in corn and other food products with the other States of any section, must command attention. The Southern oyster and other fisheries are also important.

With an abundance of money, both in the Union and in England, seeking profitable investment, there is no other field that so advantageously invites it as is afforded by the extraordinary resources of our Southern States. There was but one circumstance that has militated in the last few years against a grand tide of development in these States, and that was the fear of a general disturbance of the social and political system and a complete unsettling of values and a disorganizing of all industries caused by threatened radical legislation by Congress.

When the Fifty-first Congress commenced its sessions under the influences which then dominated the government, the country was threatened with the enactment of the Lodge force bill or other equally proscriptive and arbitrary measures. Many of the Northern papers sounded a note of alarm, and warned investors to beware of the South because of the dangerous sectional tendency of Congressional legislation. The force bill finally failed, and by so mere a chance that nobody could have any confidence that it had been thoroughly defeated. On the contrary, it hung over the country as a terrible menace, ready at any moment, while the Republican party was in power, to bring down calamity upon the country, and particularly upon the Southern people.

This sword of Damocles was suspended over the destinies of these States until the great political revolution of Tuesday, a week ago, proclaimed from mountain to sea, from river to plain, from the lakes to the everlasting hills, that sectionalism in American politics was no more; that a government of the whole people, by the whole people, for the benefit of all, had been re-established.

There will be no more danger of proscriptive legislation, and the people of the South, white and black, with their mines, their forests, their quarries, their fisheries, their fertile soil and genial climate, will be permitted to work out their destiny for the greatest good to the greatest number and for the benefit and welfare of all, according to good old Democratic doctrines.

Now comes the time for investments in Southern property, for the development of Southern resources, for it can be done in perfect security and with the fairest promise of rich returns for all judicious and intelligent transactions.

#### Solid Assurance for Capitalists and Investors.

[James N. Slater, of Birmingham, Ala., in interview in Chicago Herald.]

The present election has been of almost incalculable benefit to the South, forever quieting the iniquitous force bill, giving capitalists and investors solid assurance that properly-placed loans and investments will be profitable in the South, and especially so in the richest mineral districts, and restoring confidence all along the line. Capital has been unreasonably timid regarding loans in solid Southern cities like

Birmingham, which is largely due to the prejudices incited by unreasonable individuals and newspapers. No money could be borrowed for a less rate than 8 per cent. per annum, and most borrowers in the mineral districts in our vicinity (Birmingham) pay 12 per cent. per annum. In my visits the past four days to many of your prominent concerns engaged in manufacturing iron and steel articles I have not found the managers to be fearful of the future because of foreign competition, even in the event of free trade becoming a fixed thing, and none believe that the Democracy will pass any rank free trade measures.

#### Dull Times a Thing of the Past. [Galveston News, November 13.]

The cotton market just now is both confusing and interesting, and the immense daily sales of futures show that the speculation of the world is centering in it. Every revision of crop estimates is toward lower figures, and those who believed in 7,000,000 bales last week are not at all unwilling to concede that, after all, they may have been mistaken. The loss of over 100,000 bales each week cannot be explained away by anything else than some shortness of the crop. The farmers and interior merchants are holding back cotton for better prices, it is true. Everybody knows that, but everybody knows also that it is unreasonable to suppose that they are holding back such a large proportion of the crop as the light receipts would indicate. But it is both unprofitable and unreasonable to speculate about this, for the next ten days will show whether it be true or not. Higher prices have come. The election is a thing of the past. There is no longer any reason to hoard up cotton, and there is every reason to market it. For the moment the situation favors the bears, but whether they will be able to profit by it should the expected come to pass remains to be seen.

There are indications of the most substantial character that the cotton crop will soon be moving freely. Not only this, but that there is about to be a general revival of business. There is a very active demand for money, and on yesterday the Galveston banks received more applications for money from the interior banks than they have received in the last four months altogether. This demand shows clearly that the dull times caused by election excitement is a thing of the past, and that the people have turned their attention seriously to business.

The failures in Texas for seven days past number only six, and all were for small amounts and none had more than local effect. Collections are slow as yet, but an improvement this week is looked for.

#### The South's Great Opportunity. [Pensacola (Fla.) News.]

The proper presentation of our natural advantages must be followed by investments which should double the available wealth of the South within the next four years. Factories should draw nearer the source of supply. Our valuable water-power should be utilized, our mineral wealth should be worked and capital should coin from our sunshine the gold of commerce.

We are in better shape to open up our resources than we were eight years ago. Long lines of rail now open up sections

heretofore inaccessible. Valuable discoveries have been made on every hand, and our own industries now make a better showing. Florida is now ready to prove that she can furnish fertilizers of the best character to the farmers of the East and West. Eight years ago we were not ready to prove that our State could produce more sugar than Louisiana has ever done. Our lumber market should be stirred to fresh activity by freer intercourse with England. Our fruit has just commanded a line to Liverpool "all by itself."

And Pensacola, with the finest harbor in the South, will be remiss in duty to herself if she does not enlarge her markets and control new products from the interior. She might double her fish industry by the erection of a canning factory. With a whaleback fleet she could easily become queen of the Gulf. Only a little enterprise and capital should be required to open up a direct trade with our neighbors of Central and South America.

"There is a tide in the affairs of men," and he who does not take advantage of the next four years is recreant in duty to himself, his neighbors and his country.

#### Have Confidence in the South.

[Gadsden (Ala.) Times-News.]

Well-meaning but misinformed persons are declaring every day that all the "boom" has expired in the South; that there is no encouragement for the investor; that the majority of recently established towns and industrial enterprises are at a standstill, and that years must pass before there will be any improvement. It would be idle to deny that so far as new town enterprises and industrial undertakings are concerned, the Southern country has experienced a reverse, but such reverses come to all countries, and are as severe elsewhere as they could possibly be in the South. The causes of this depression were in a large measure foreign to the South. The financial stringency beginning with the Baring failure has been felt all over the country, and it is no wonder that in times of enforced conservatism there should be a lack of enterprises, many of them novel and experimental. Then came the misfortunes of the phenomenally low price of cotton, which caused distress to the farmers and thus weakened seriously the foundation support of the country. Times go by turns, and it is impossible to suppose that in a country like the South such a state of things should last indefinitely. It is unnecessary to recount here any of the facts illustrative of the wonderful resources of the South, or of its extraordinary progress within the last decade.

We believe the time will come speedily when full faith in the South will be restored, and when the flow of capital and enterprise will go on as heretofore. The facts which prompted the expenditure of immense sums of money and the starting of development works are as strong to-day as ever. The South is a great country, with splendid climate and a magnificent variety and plentitude of resources. In these days, when population is continually pressing into new fields, such a country is bound to be taken up by settlers. Meanwhile every interest in the South is progressing. It is the country to live in and grow up with, and at this moment there is no part of the world where the promise of ultimate prosperity is so bright. A country with so many advantages must necessarily come to the front, and those who identify themselves with it, having an abiding faith in its future, will not be disappointed.

#### A Prosperous Era Inaugurated.

[Knoxville (Tenn.) Sentinel.]

The belief is general that Cleveland's administration will see such an era of prosperity as the country has not seen for years. That this confidence is real is manifested by the money already put in various enterprises since the day of the memorable elec-

tion, the largely increasing volume of business, and the happiness felt all over the country, and especially in the South, at his almost unanimous choice as President.

In Knoxville the beneficial effect has been felt already. Mr. J. Allen Smith said to a *Sentinel* reporter this morning that the orders sent his plant (the City Mills) from the Southern territory had been double since Cleveland's election and the advance in the price of cotton. The territory referred to is principally North and South Carolina and Georgia.

Mr. Jacob L. Thomas is jubilant over the prospects for a prosperous era and an enlarged business. "Already," said he, "we have several orders for immense proportions of new stocks, which fact nearly all members of our firm attribute to the election of Mr. Cleveland. And even should there be no change in tariff legislation, the confidence reposed in the coming administration will cause an increase in all branches of business."

The Knoxville Woolen Mills, one of the largest industrial concerns not only in Knoxville, but in the State, has felt no depressing effect. To the contrary, they have put in operation 200 additional looms for the manufacture of flannels, etc., the improvements costing from \$50,000 to \$75,000. This addition to the main plant has just been put in operation and affords employment to 100 employees, principally women and girls.

#### A General Feeling of Prosperity.

[Macon (Ga.) Telegraph.]

Merchants say that they are selling all the goods they can handle and that collections were never better. The drummers who have been out on the road all the last week report the people in all parts of the State as being more hopeful of better times in the future, and to this end are buying large bills of goods and settling up back accounts.

The advance in cotton has made the farmer more hopeful, and while it is true that most of them have marketed their cotton, yet the advance has given them hope and courage, and they are settling up for supplies that had been furnished them on time.

In order to ascertain whether the election had actually benefited the trade of the city, a *Telegraph* reporter called on a number of wholesale merchants Saturday to obtain their views. The first place visited was the Macon Hardware Co., and in response to the reporter's query, Mr. John Van Syckle said: "Trade is picking up wonderfully. You can say for us that our trade is good and increasing daily. Our drummers find no difficulty in selling goods, and the people are very hopeful. One thing worthy of mention is the fact that we have not had a failure among our customers this year, but, of course, the election had no bearing on that."

W. DOXFORD & SONS, boat builders, of Pallion Sunderland, England, have recently completed for Messrs. Crow, Rudolf & Co., of Liverpool, who are the foreign agents of W. S. Keyser & Co. and Hyer Bros., of Pensacola, Fla., the steel steamship Samoa, which is said to be the largest cargo vessel in the world. She is 465 feet long and 52x36 feet beam and has a gross register of 6,400 tons, dead weight capacity of 9,500 tons on 25-feet draught and gross displacement of 13,600 tons. The Samoa will have a speed of ten and one-half knots an hour.

THE Farmers and Laborers' Union, Farmers' Alliance and Farmers' Mutual Benefit Association held a joint meeting in Memphis, Tenn., on November 16, 17 and 18. Delegates were present from many States. The usual business was transacted and officers elected for the ensuing year. H. L. Loucks was re-elected president of the Farmers' Alliance.

#### Shipping Florida Oranges to London.

ON BOARD STEAMER ETHELWOLD,  
FERNANDINA, FLA., November 16.

There is nothing attracting the attention of the orange growers of Florida at present so much as the experiment of the shipment of a cargo of oranges to London. We say experiment, because it is the first whole cargo that is sent direct from a Florida port to a foreign one, although numerous shipments have been made from New York in small quantities of twenty-five to one hundred boxes. The direct export scheme was evolved by Mr. E. S. Goodsell, of 103 Park Place, New York, about five years ago, when he sent out circulars to the Florida growers asking for a pledge of fruit to make up a cargo, but the growers were rather shy and nothing definite could be done except via New York. Every year since Mr. Goodsell has made efforts to get fruit enough pledged to warrant chartering a first-class fruit steamer. Last January, however, he determined to make the experiment whether or no, and made all the preliminary arrangements and in time chartered the "Ethelwold," of Glasgow, a steamer built in 1890 expressly for fruit trade. The steamer, therefore, has been in service less than two years. All the best methods of ventilation known up to the time of building were adopted. There are two ventilators fore and aft for each deck, with cut-offs, so that the current of air can be changed at will. These ventilators are so effective that a current of air is produced at the hatches that nearly lifts one's hat off in looking down.

The Ethelwold is a screw steamer, with triple expansion engine, cylinders 18, 27, and 45 inches diameter, boiler 17x13½ feet steel plate 13-16 inch thick, with an average speed of twelve knots per hour. It will be readily seen that if a cargo of oranges will carry to England in any vessel, it certainly will in the Ethelwold.

Early in September Mr. Goodsell sent out circulars to the orange growers of Florida announcing that he had chartered the Ethelwold for London, and she would be in Fernandina on the 10th of November, and prepare to sail on the 15th. In the course of a few weeks 13,000 boxes of oranges were pledged by the growers, but a number of them have weakened and the steamer will put to sea with less than 11,000 boxes. Everything has been done by the different railroads of the State to facilitate the gathering of fruit to Fernandina in the quickest possible time and best condition. The weakening of the growers is due to the fact that the fruit is several weeks late in maturing, and they have an aversion to sending anything but ripe fruit. Again, hammock fruit matures earlier than that from the pine land, and many of the pledges are from the pine-land groves.

The storing away of the fruit has been done in the most thorough manner under the direct supervision of Mr. Goodsell. Thorough ventilation has been the aim. Dunnage has been placed on each deck so that the bottom tier of boxes is not within eight inches of the deck. Every five or six boxes a space of four inches is left which is properly chocked to prevent shifting. This enables a current of air to pass from one end of the hold to the other and to the hatches.

Mr. Goodsell's faith in the results of the shipment is such that he had advanced seventy-five cents per box to the growers and paid all freight charges, so that while the growers have only a few dollars at stake, Mr. Goodsell has thousands; and it stands to reason that nothing will be left undone to make the experiment a success. If the English people will buy this cargo at a price that will pay the growers of Florida, other cargoes will follow, and it is earnestly hoped that it may be so, as it will furnish an outlet for an immense amount of fruit; and as the acreage of bearing trees is con-

stantly increasing, this outlet will be of inestimable value to the growers.

The last carload is now being put aboard, and soon the Ethelwold, with the first cargo of oranges for a foreign port, will steam out, with Capt. William Burrell in command, accompanied by his faithful wife and full crew, and your humble servant as supercargo.

E. O. PAINTER,

Of DeLand, Volusia county, Fla.

P. S.—A daily account will be kept of the temperature of the hold during the voyage over and reported to the MANUFACTURERS' RECORD on arrival, together with the apparent condition of fruit. E. O. P.

#### Importance of Savannah's Commerce.

By Col. J. W. Avery.

The entire commerce of Savannah in 1891 amounted in value to \$153,550,000, the highest figure it had ever attained. The following table gives the value of the principal items of import and export for that year:

	Value.
Cotton, 1,139,608 bales.....	\$52,000,000
Groceries.....	25,000,000
Naval stores, 991,880 barrels....	6,300,000
Lumber, 107,371,082 feet.....	4,500,000
Fertilizers.....	3,000,000
Liquors and tobacco.....	4,250,000
Provisions.....	5,000,000
Dry goods.....	4,500,000
Clothing.....	1,000,000
Boots, shoes and hats.....	2,000,000
Hardware.....	1,500,000
Furniture.....	1,000,000
Jewelry.....	750,000
Drugs, oils and paints.....	1,250,000
Manufactures.....	7,500,000
Retail trade.....	26,000,000
Miscellaneous.....	8,000,000
Total.....	\$153,550,000

For fifty years Savannah has been the principal port of Georgia, Florida and a great part of South Carolina. Its commerce began mainly in 1822, when it amounted to 105,261 bales of cotton and 11,232 tierces of rice. The Georgia Central Railroad in February, 1847, increased her exports \$840,000 over that month in 1846. The development of Savannah's commerce since that time has been rapid and constant:

Imports and exports in 1860....	\$26,000,000
" " " 1872....	73,000,000
" " " 1886....	102,000,000
" " " 1891....	153,550,000

The increase in imports and exports by water is indicated by the following figures:

	1872.	1890. (Census figures.)	Inc. Per cent.
Cotton.....	\$34,266,847	\$50,016,550	35
Naval stores.....	5,974,879	6,300,000	600
Lumber.....	1,677,135	4,500,000	200
Rice.....	205,320	1,500,000	700
Pig iron.....	541,810	541,810	200
Hides and wool.....	3,547,842	3,547,842	800
Fruits & vegetable.....	2,290,300	2,290,300	.....
Yarns and Textiles.....	7,062,271	7,062,271	500
Miscellaneous.....	.....	.....	.....
Total exports.....	\$39,446,716	\$72,816,107	.....
Total imports.....	32,849,056	79,083,713	.....
Grand total.....	\$72,295,772	\$142,899,820	.....

The growth of business has been remarkable. Cotton exports increased from less than 500,000 bales in 1872 to 1,139,608 in 1891.

Naval stores swelled from less than \$50,000 in 1873 to \$6,223,000 in 1891.

Timber grew in fifteen years from less than \$500,000 to more than \$1,500,000 at 50 per cent. less price.

Fruits and vegetables ran from less than \$500,000 to more than \$3,500,000.

Pig iron enlarged from \$25,000 to more than \$1,500,000.

Cottonseed-oil from nothing grew in five years to \$1,000,000.

The tonnage in 1873 was 1,074,367 tons, and increased to 1,828,614 tons in 1890 with only 116 vessels more, showing increased water depth and heavier ships.

Savannah has received 13 per cent. of the United States cotton crop for years.

Savannah is the natural market, besides, for Southern cotton, for the phosphates, naval stores, lumber, fruit and vegetables of Florida and Georgia, and the coal and iron of Georgia, Alabama and Tennessee.



## Cotton Culture in East Africa.

German residents of Witu, a country in East Africa containing about 520 square miles, and which became a German protectorate in 1889, have been experimenting during the last year or two with the cultivation of cotton. These experiments have attracted considerable attention both in Eastern Africa and in Germany, particularly in the latter country. In a recent report made by Vice-Consul Simons, under the direction of Sir Gerald Portal, it is stated that, were it not for the difficulty experienced in securing a sufficient number of laborers to look after the growing cotton, the experiments would have been eminently successful. The labor obstacle, it seems, has not yet been fully overcome, but the hope is entertained that in a short time an ample supply of labor will be had, as the labor supply has heretofore always fallen short of the demand, and as the present laborers are in every way unreliable, any new enterprise that may be undertaken, the consul says, "must necessarily suffer thereby both in finances and results" until this trouble can be gotten over.

In his report the consul takes as an example a plantation of 200 acres located at Waage, near the port of Lamu. The preliminary expenses of this enterprise were about \$6,000, of which about \$4,000 was expended in buildings, sheds, etc. A single native laborer can prepare and cultivate during the season, the length of which is eight months, about four acres. There are two classes of labor on the coast, one paid at the rate of sixteen cents per day for each working day, or \$4.25 a month, and the other receiving twelve and a half cents a day, or \$3.25 a month, payment being made partly in cash and partly in food and tobacco. The average yearly cost of cultivating 200 acres of cotton is therefore between \$1,500 and \$1,600. A plantation of this size requires about 4,000 pounds of cottonseed, which costs about \$375. The cotton, when picked, will yield about 80,000 pounds of lint cotton similar to Sea Island and 100,000 pounds of cottonseed, besides some 20,000 pounds of refuse and dirt. With care and good management the crop of cotton could possibly be increased to 100,000 pounds on a 200-acre plantation.

Out of the first season's experiment some 800 bales of 100 pounds each were sold for about \$9,000, from which about \$1,090 were deducted for freight, insurance and other charges, leaving a balance of \$7,910. The cost of production, excluding preliminary expenses, was \$5,965, leaving a profit on the cotton, after allowing interest on the capital invested, namely, \$6,000, of between \$1,800 and \$1,900, or over 30 per cent.

It will be observed that in the above calculation no account is taken of the 100,000 pounds of cottonseed as a source of profit, either by the extraction of oil or for other purposes. It may also be stated that on the plantation under review about 8,000 coconut trees have been planted, and that these trees do not at all injure the growth of the cotton. The trees are expected to yield an annual profit of about thirty cents each, or \$2,400 in the course of six or seven years. But this item is not, of course, taken into consideration in the cotton-growing experiment under review.

From the details given above it seems very probable that, if the difficulty in securing the proper kind of labor can be overcome, there is a good field on the Witu coast for the culture of cotton. The country all along the coast, from the Umba river to the Juba, is particularly adapted to the cultivation of Sea Island cotton. The soil generally is good and is covered with luxuriant grasses, and large tracts of the country are practically free from brushwood, scrub and jungle. The natural conditions are all favorable to the culture of cotton to a re-

markable degree, the only drawback of any account being the inadequate supply of labor. In the German territory this difficulty seems to be in a fair way of being removed, and we confidently look, therefore, in the next few years for a considerable increase in the cotton supply from this new field on the eastern coast of the Dark Continent.

## Cotton Crop Guesses.

Messrs. W. White & Co., of Dallas, Texas, recently asked a number of prominent Texas cotton firms for their estimates of the Texas cotton crop and also the total American crop. The estimates received were as follows:

	Texas.	American.
Randall, G. H., Waco.....	1,900,000	6,900,000
Anderson, Neil P., Fort Worth.....	1,700,000	6,900,000
Martin, Wise & Fitzhugh, Paris.....	1,750,000	6,750,000
Woodward, E. P., & Co., Waco.....	1,900,000	7,250,000
White, W., & Co., Dallas.....	1,900,000	6,900,000
Bennett & Lovett, Hillsboro.....	1,750,000	7,000,000
Brown, J. H., & Co., Tyler.....	2,000,000	7,000,000
Fulton, A., & Co., Sherman.....	1,800,000	6,750,000
Robards, W. C., San Antonio.....	1,800,000	6,800,000
Edwards, H. L., & Co., Dallas.....	1,800,000	6,900,000
Jarratt, C. W., Belton.....	1,900,000	7,250,000
Smithers, J. T., Belton.....	1,800,000	7,000,000
Wood & Kincaid, Honey Grove.....	1,750,000	6,750,000
DePass & Co., Corsicana.....	1,800,000	7,000,000
Bath, Felix P., & Co., Dallas.....	1,950,000	7,000,000
Sorrells, C. T., Hillsboro.....	1,800,000	6,950,000
Robertson, W. R., Mexia.....	1,900,000	7,000,000
Lewine Bros. & Co., Gainesville.....	1,750,000	no est.
Calhoun, W. E., & Co., Gainesville.....	1,750,000	6,644,000
Witherspoon, C. F., Denton.....	1,750,000	6,800,000
Bateman, J. W., Nacogdoches.....	2,200,000	7,700,000
Crow, W. J., Henderson.....	no est.	7,125,000
Birge, W. A., & Son, Sherman.....	1,900,000	7,000,000
Bruce, S. R., & Co., Mineola.....	1,750,000	6,750,000
Andrews, C. A., Sherman.....	1,800,000	6,900,000
Aver, William, Brenham.....	2,000,000	7,200,000

## Alabama Industrial and Scientific Society.

The Alabama Industrial and Scientific Society held a meeting in Birmingham, Ala., on November 16, at which a number of interesting papers were read. The first paper was read by Henry McCalley, of the State Geological Survey, the subject being "Alabama Bauxites." It is only recently that bauxite has been found in Alabama, and thus far but two companies are engaged in mining it. These have shipped some 5,000 tons to Pennsylvania and New York, where it is used largely in the manufacture of alum. Analyses show it to be equally as good as that found in France. Thus far deposits have been found in Cherokee, Calhoun and Cleburne counties, and it is thought careful search will disclose deposits equally good in other counties.

The second paper read was on "The Clays of Alabama," by Dr. E. A. Smith, State geologist. In this the writer treated the subject both from a scientific and practical point of view. After showing the localities and formations in which the clays occur, he described the severe tests which had been made, and stated that some of them were found just as refractory as the Mount Savage clays. The buhrstone from Choctaw county was described as of especial interest, since bricks made from it were found unchanged after having been subjected to severe tests for some weeks in Birmingham. The quantity is said to be sufficient to supply the world with refractory material. Dr. Smith states that the trouble with it is that, being so light, manufacturers of bricks are afraid to use it for fear that the bricks would be refused by furnacemen.

Mr. G. H. Montgomery, of Jacksonville, read an interesting paper on the need for accuracy in mine surveying. Following this R. C. McCalla, Jr., of Tuscaloosa, told of the government improvements on the Warrior river, and predicted that within a few years coal would be delivered by water to Mobile at a cost of \$1.50 per ton. Dr. Smith then showed some fine stones which had been cut by Tiffany & Co. from a berl crystal found in Coosa county. He says many of these crystals will probably be found in the same county if search is instituted in a scientific manner.

## Southern Interstate Road Congress.

On November 16, 17 and 18 the Southern Interstate Road Congress met in Memphis, Tenn. S. W. Mullins, a member of the executive board of the National Road Congress, was elected president. A committee appointed to report on the advisability of co-operation with the National League recommended that the Southern Interstate Road Congress be merged into the former. Resolutions were passed calling on the legislatures of different States to enact such laws as would improve the condition of the public roads, and also one endorsing the arrangement for a separate exhibit of different road systems at the World's Fair.

Regarding the general improvement of roads the congress recommended that each State provide an engineer, who, with the assistance of county or congressional district engineers, shall supervise the construction of all roads in the State. As to the use of convicts, it was recommended that in those States where convicts can be used on the roads it shall be done under the general policy of delivering to each county the penitentiary convicts under such restrictions as to number delivered to one county at one time as shall give every county in the State a fair chance to secure a proportionate number of the convicts, they to be worked in conjunction with the county convicts on the public highways.

In discussing this point, J. P. Young, of Memphis, said that placing Shelby county convicts under the supervision of the turnpike commissioners had greatly benefited the roads. The average cost was about thirty-seven cents per capita per diem. Regarding the cost of keeping the roads otherwise, he said there were 10,000 men in Shelby county who were subject to road duty nine days each year. If they valued their time at even \$1 per day this would be a cost of \$90,000 per annum. By using convicts the larger part of this would be saved and the work better done.

Various other resolutions were passed recommending legislation on the subject of wide tires for wheels, declaring that labor and property should bear their proportionate share of the construction and maintenance of improved highways, and recommending the organization of road congresses in each State, to stimulate the work in the State and serve as auxiliaries to the National League.

## How Railroad Towns Grow.

[From the Baltimore American.]

The growth of Brunswick (Frederick county, Md.) has been wonderful. From a village of about one hundred inhabitants two years ago, it has grown into a town of fully 2,000 people, and it is estimated that two years hence it will contain a population of fully 5,000. The Baltimore & Ohio Railroad Co. continues to add to its already extensive plant there, an immense transfer station now being in course of construction, and now has over 1,200 employees in the town. Over 225 dwelling-houses have been erected this year, and fully 200 more are being built. During the coming year at least 300 houses will be constructed. The greater part of these will be used for railroad employes and their families. Among the buildings nearing completion are a fine brick schoolhouse to cost about \$5,000, by the authorities of Frederick county, and an extensive system of water works to supply the rapidly growing town with pure water. Arrangements are being made to rebuild the bridge across the Potomac, between Brunswick and Loudoun county, Virginia, which was destroyed during the war, the piers of which are still standing. When completed the bridge will prove a great convenience, as the only means of communication at present is by ferry.

The railroad company has set apart ten acres of ground in the centre of the town for a public park, and intends to beautify

and embellish it in order that it may become a popular resort. The Baltimore & Ohio will also soon commence an addition to its large yards, it being the intention of the company to have accommodations for 4,000 cars.

## Southern Money in Southern Development.

[From the Chattanooga News.]

There is no city in the South that has attracted more attention and more capital than has Chattanooga, and no city can point to a better record in the way of rapid and substantial growth. Much of this has been accomplished by what might be called native effort and capital. Part has been done by Northern and Eastern people who have moved here, and the remainder is the result of the work of people from other Southern States.

The labors of each one of these are appreciated, and Chattanooga to-day welcomes good citizens from any and all parts of the country. By united effort these people have made Chattanooga what she is to-day, and they are continually at work improving her condition.

So wonderful has been the influx of settlers and capital to the city that it has furnished the subject for much comment, and abroad and even at home the impression has been made that Chattanooga's advancement is due to Northern capital and Northern energy, and is in fact a Northern city. All credit is given the North for the improvements, and of course much should be given the gentlemen from that section who have done so well for this country, but the fact remains that the South has itself done a great deal more both in the way of furnishing capital and in planning and doing the work than any other part of the country.

When the various enterprises are counted it is found that Tennessee, Georgia, Alabama, Mississippi, Louisiana, Kentucky, the Carolinas, and last, but not least, Florida, are all represented in the great work of development, and their part greatly exceeds any other.

For instance, during the past few weeks over \$200,000 has been placed in Chattanooga by Florida parties. Before this parties from that State had invested at least that much more. This is merely an example, and instances of the same kind from many other Southern States can be mentioned.

A careful view shows that most of Chattanooga's improvements are due to these people, and the idea that the North has done it all is entirely incorrect.

This fact is merely mentioned to correct an erroneous impression. Our city is the home of all good people of any section who want to reside here, and almost every State in the Union has a share in our wonderful development.

## Improvements in South Baltimore.

Mr. Joseph M. Cone, the well-known builder, has purchased three large tracts of land from the South Baltimore Harbor & Improvement Co., and is going to improve them by erecting good substantial pressed-brick-front houses with marble steps, and to contain all the modern improvements.

The water works are just completed, and the fire department has been equipped with improved machinery and appliances to extinguish fires.

The progress of South Baltimore has been remarkable during the past few years, and in addition everything points to a busier and more prosperous time during the coming year. Many prospective buyers have been looking over the property with the intention of putting up buildings for residences and manufacturing purposes. It is probable that one of the largest packing houses in the country will locate on the property of the South Baltimore Harbor & Improvement Co.

## PHOSPHATES.

### The Florida Phosphate Industry.

By Edward Willis.

[From the Eleventh Census: Report on Mineral Industries.]

The occurrence of phosphate rock of low grade in this State has been known since 1883, when noticed by Prof. Lawrence C. Johnson, but in 1888 discoveries were made of deposits of large extent and high in their percentage of phosphoric acid. These deposits have continued to attract attention, have been the scene of speculation, and have been developed with great rapidity and enterprise.

It was known in 1882 that phosphate deposits could be found following an irregular line from Thomasville, Ga., down through Hamilton, Suwanee, Alachua, Marion, Sumter and Polk counties, disappearing in Manatee county in the region of Charlotte Harbor. They have been noticed more particularly from Live Oak, Suwanee county, to Ocala, Marion county, and attention has been paid only to this region. The region north has been traced by popular report, not by careful survey. These deposits are in high land, and the line of phosphates is generally coincident with the upper part of a ridge running approximately north and south. Commencing with the upper limits of the deposit, it is impossible to say how much of the rock is really phosphatic and how much is Vicksburg limestone, with which it has been confused. From Live Oak to Ocala there is little of the limestone, but the phosphate rock is very abundant. It is usually a very porous rock containing through its mass the bone and teeth of various vertebrates. In badly drained spots it is wet and then soft, so that it is easily broken, but on drying it becomes so much harder that it is valued as a building stone, and has been so much used for chimneys and underpinning for houses that it is known as "chimney rock." The ridge with its phosphate deposits skirts the great region of depression which includes the sinks of Alachua county. Three miles north of Waldo, in this county, there is a large, dry sink in which Mr. John A. Preston found phosphate rock containing 25 per cent. of phosphoric acid at a depth of fifty to seventy-five feet. At Fort Harley, near by, deposits have also been found, and again on the borders of Santa Fe lake. The Devil's Millhopper is another sink about five miles west of Gainesville which contains quantities of loose boulders of phosphate rock. Near it is a large quarry of building rock, also phosphatic. Three miles west of Hawthorne there is a deposit of thirty-five to fifty acres called Simmons's Quarry, from which samples have been taken showing 45 per cent. of calcium phosphate. Similar deposits have been described near Newnansville. Little attention has been paid to these deposits, although in 1883 Dr. C. A. Simmons, of Hawthorne, began quarrying the rock and converting it into fertilizer. Many other isolated spots had been noticed in the State before attention was prominently called to Florida by the developments of 1888. Among such deposits was one passed through in digging the pump-well for the Jacksonville water works. At a depth of twenty feet a thin layer of greenish marl containing considerable phosphate was observed.

In 1886 phosphate rock of high grade was discovered on the Peace river. The Arcadia Phosphate Co. has made extensive developments on rock there exposed in the river bed. A permanent bridge has been built, and drying kilns, hoisting machinery and screens are in operation. In 1888 the company began shipments, which amounted to 3,000 tons. The richest rock is in the form of coarse sand from the river bar.

The year 1888 also developed an entirely

different class of phosphate deposits, of undoubtedly great value to the State, and which have attracted attention in all parts of the United States and even in Europe. At the close of 1888 Mr. Albertus Vogt, living near Dunnellon, a village on the Withlacoochee river, in Marion county, found fossil teeth in a white subsoil. Some of this white soil was submitted to a chemist for analysis, and found to contain a large proportion of phosphate of lime. This soil was soon found to extend in a more or less pockety belt over a district some thirty miles long and six wide. Active exploration began at once and extended, rapidly, with the usual speculative excitement of such discoveries. The fact is well established that much of the material is of unusually high grade—the highest in the United States. This developmental and speculative work was the main feature of the census year. The following table shows the expenditures made in regular mining:

#### STATISTICS OF PHOSPHATE MINING IN FLORIDA IN 1889.

Total phosphate rock produced (long tons)	8,100
Total phosphate rock sold (long tons)	4,160
Stock on hand January 1, 1890 (long tons)	3,940
Total value of product	\$10,500
Number of hands employed	64
Expenditures:	
Total wages (including office force at mines)	\$17,404
Paid for supplies	1,800
Paid for other expenditures	523
Total	\$19,727
Capital invested:	
In land	\$130,000
In buildings	22,000
In tools and machinery	8,000
Cash	5,000
Total	\$165,000

Florida phosphates may be divided into four classes, namely, the hard rock, the soft rock, the land pebble and the river pebble.

Of the hard-rock phosphate there are certain local variations—the massive rock itself, the laminated rock, in which there are narrow layers of phosphate separated by the equally narrow interspaces, and the plate phosphate, which is probably derived from the laminated variety, and is thus far found only in one or two localities in Florida in the more recent deposits. The hard-rock phosphate is white, creamy, gray or yellowish-brown in color, and varies in texture and structure from one of homogeneous appearance to a brecciated variety, and to still others carrying considerable sand and clay. It is sometimes stained in a slight degree with iron, and always contains more or less alumina. The percentage of phosphate of lime contained in this class of rock is between 80 and 86.

The extent of the hard-rock phosphate as thus far developed is from a point about south of Tallahassee, following the line of the Gulf at a distance of from twenty to thirty miles around to a little below Dade City in Peninsular Florida. Its length is a little less than 200 miles. The deposit is not continuous, but may occur at any point within its length. It also extends into the north of Florida quite to the Georgia line in the vicinity of the Suwanee river. The width of the belt is between six and ten miles. Mining is by open pits, and in the case of the older and better organized companies is conducted with the most approved plants. The character of the occurrence of the hard-rock phosphate has not been altogether satisfactorily determined, but the evidence is in favor of a mass, or masses, of boulders piled together over areas of greater or less extent. The actual depth of any of these piles has not been determined, the greatest depth yet reached being about sixty feet from the surface. From an inspection of the deposits one would be led to think that their materials have not been transported far from the beds of which they originally formed a part. Hard-rock-phosphate boulders have been derived from rocks of two geological ages, one, eocene, which as the widest areal distribution, and the other, miocene, which is found within the so far comparatively limited area southeast of Tallahassee. In the vicinity of Dunnellon, where the hard-rock

region is crossed by the Withlacoochee river, the phosphate has been broken down, and is now dredged from the bottom of the stream in a form somewhat altered from its original condition, or as pebbles. Vertebrate remains occur in abundance. Hard-rock phosphate has also been mined near Boston, Ga., a station on the line of the Savannah, Florida & Western Railroad just north of the Florida boundary.

#### ANALYSIS OF PHOSPHATE ROCK FROM LURAVILLE, FLA.

	Per cent.
Phosphoric acid, P <sub>2</sub> O <sub>5</sub>	33.91
Lime, CaO	47.02
Alumina, Al <sub>2</sub> O <sub>3</sub>	2.37
Ferric oxide, Fe <sub>2</sub> O <sub>3</sub>	1.46
Magnesia, MgO	0.39
Alkalies, Na <sub>2</sub> O	0.19
Sulphuric acid, SO <sub>3</sub>	0.36
Fluorine, F	2.35
Chlorine, Cl	0.08
Silica (dissolved), SiO <sub>2</sub>	0.10
Carbonic acid	2.67
Insoluble matter	5.07
Water at 105°	1.18
Water at red heat	2.78

99-93

The soft-rock phosphate occurs both as a deposit by itself and in the deposits of hard rock, filling the spaces between the boulders. It may be either clayey or sandy in its nature. It falls considerably below the hard rock in the percentage of phosphate of lime, and naturally shows a higher percentage.

The land-pebble phosphate is found in a number of localities in Peninsular Florida, the center of production at present being in Polk county, within a radius of eighteen miles of Bartow. Thus far it has been worked only to the west of Peace river, within twelve or fifteen miles of it, but prospectors have reported its occurrence beneath a large part of the surface between Peace river and the Gulf. It is essentially a mass of white phosphate pebbles lying in a matrix of phosphatic clay or sand, usually a combination of the two. The matrix is easily disintegrated by water and the pebbles are washed out by appropriate machinery. The pebbles vary in size from grains to one inch in diameter, the average being between one-quarter and one-half an inch. They are hard and usually pure white or cream colored on fresh fracture. The percentage of phosphate which they contain is between 75 and 80 per cent., but the yield of the rock as mined would not reach this standard; in fact, falls considerably below it. The land pebble is found in several parts of Florida, in the vicinity of Bartow, in connection with the plate rock at Anthony and Sparr, ten miles north of Ocala, and again northeast of Gainesville, occupying here an extensive area. The age of the land-pebble deposits is probably older pliocene. The methods of mining the land pebble are being rapidly developed, the most complete plant being that of the English company, seven miles south of Bartow, where, under the favorable conditions existing, enormous basins have been dug in which dredges of great capacity are floated. The pebble is dredged, washed by machines adapted to the purpose, dried and then shipped.

The river pebble is found in bars in the rivers of Southern Florida, the greatest production at present being the Peace river, which furnishes nearly the entire product. The other rivers in Southern Florida that are known to carry river pebble in quantity are the Alafia, the two Manatees and the Caloosahatchee; in Northeast Florida, Black creek, a tributary to the St. John's, which enters the latter stream about twenty miles south of Jacksonville, also yields a small amount. Pebble phosphates are also found in many other streams entering the Gulf, but thus far not in workable quantities. With the pebbles are often found the remains of vertebrate animals. The river pebble is blue or black in color, of a size from one inch down, usually finer as distance down stream is gained. It occurs as pebbles or, more rarely, as the hardened casts of small mollusks, which show some attrition by water. In the Caloosahatchee the pebble

is mixed with ordinary shells of carbonate of lime washed out from the pliocene and postpliocene beds bordering the river above. The derivation of the river pebble is probably very largely from the land pebble deposits, the streams in which they occur draining the country occupied by these deposits. Some of them may also have been derived from the hard rock phosphate. The percentage of phosphate of lime in the river pebble is between 58 and 68 per cent., the average of the cargoes running between 60 and 65 per cent. The river pebble is dredged, washed and floated on the river to the works, where it is then dried, cleaned and made ready for shipment. The phosphate-drying works are very extensive.

#### Mining Soft Phosphate.

KENDRICK, FLA., November 11.

Dr. R. R. Snowden, of Ocala, a chemist of world-wide reputation, who did so much of the preliminary work during the first days of the phosphate discoveries in Florida, has discovered a process for making available the mineral phosphates without the use of sulphuric acid, and doing away with the expensive plants now necessary to carry on the manufacture of commercial fertilizers. This discovery will be of wonderful benefit to the farmers of the world in cheapening the cost of fertilizers.

The soft phosphates of Florida, which show an analysis of from 60 to 70 per cent. bone phosphate of lime, have not been considered of great commercial value, owing to the high percentage of iron and alumina they contained, rendering them unfit for treatment with sulphuric acid, but by this new process the soft phosphate can be manipulated as well as the hard rock.

These soft phosphates can be mined so cheaply that when they are used by the factory for obtaining phosphoric acid, commercial fertilizers can be placed on the market at one-half the present cost and still leave a handsome profit for the manufacturer, besides making a fertilizer of much greater value, for the sulphuric acid now used to make available the rock phosphates is considered injurious to the soil.

The soft phosphate deposits occur just precisely as do the brick-clay deposits at the North, and can be mined as cheaply, for after the overburden is removed—in this district not over two and one-half feet—everything that is dug from the mines will be, under this new process, merchantable phosphate.

Professor Wyatt, in his book "The Phosphates of America," places the cost of mining and preparing rock phosphate at \$500 per ton. My experience, which is practical, teaches me that as regards boulder deposits he is about correct. I am mining soft phosphate, drying and storing it at fifty cents per ton, and without the use of machinery. An additional advantage we have in mining this class of phosphate is that we can do all the work by the ton, paying so much per ton for mining and so much for drying. We use platforms and dry by the sun.

This will rapidly hasten the development of the soft phosphate deposits and bring much capital and increased population to this State, which is so steadily growing and prospering.

The two companies here keep steadily at work. PHOSPHATE.

#### Phosphate Markets.

OFFICE MANUFACTURERS' RECORD, BALTIMORE, November 23.

The volume of trade in phosphates during the past week has been light, and the situation in no respect changed from that of a week ago. Several sales for future delivery are reported on private terms, and prices hold about steady at the late decline. Few arrivals of rock are reported for the week, but a number on passage are ex-





## IRON INDUSTRY.

### Prospects for Making Southern Steel.

In a letter addressed to Col. A. S. Colyar, of Nashville, Tenn., by A. M. Shook, president of the Southern Iron Co., the latter, after referring to the efforts of Colonel Colyar and others, which have resulted in the growth and development of the coal and iron interests of the South, calls attention to the conditions which surround this industry at the present time. Twenty years ago, he says, the manufacture of steel in the United States was practically an untried experiment. The whole product of the furnaces was either sold for foundry purposes, or puddled and sold in the form of rails, bars, etc. With the introduction of the Bessemer process for the manufacture of steel a new element was injected into the iron business. At first, while the price was very high, the manufacture of steel did not spread rapidly, for the reason that, in addition to its high cost and the large amount of capital required to successfully manufacture steel, the area of the then known steel ores was limited. Notwithstanding these facts, the superior quality of steel for all purposes as compared to wrought iron was so patent that the manufacturers in the North, who had the foresight and money to appreciate this fact, prosecuted its development until to-day they are able to produce a ton of steel at a less price than they can produce a ton of bar iron.

The effect of this upon the present and future development of the iron industry in the South is important. Southern irons are now nearly all marketed north of the Ohio river. If the ores were sufficiently low in phosphorus to admit of the manufacture of Bessemer steel, the South would be at no disadvantage as compared with other sections of the country, but it is an admitted fact that, with only a few exceptions, the ores are not suited for this purpose. The revolution from iron to steel is going on in a steadily increasing ratio, and consumers all through the United States and other countries are demanding manufactured steel where they formerly used iron. Confronted with these conditions, it is of infinite importance that the South should turn its attention to the manufacture of steel.

If steel-making in the South was not feasible it would be useless to call attention to the importance of the matter, but in Chattanooga steel has been manufactured on a scale sufficiently large to demonstrate that with a plant producing from 300 to 500 tons per day large returns are assured. The difference between the cost of producing pig iron in Birmingham and Pittsburgh is about \$4.00 per ton in favor of the former. If steel is manufactured by either the acid or basic-Bessemer process, this margin of difference in the cost of pig iron will enable the manufacturer to meet any increase in expense incident to the duplex process and still produce his steel for less than it can be done in Pittsburgh with the same character of plant and equipment. If the basic open-hearth is employed there is no reason why the Southern manufacturer cannot produce a ton of ingots as cheaply as is done in the North, and this process is the one from which the best results are likely to be obtained.

In the past two obstacles have prevented the manufacture of open-hearth steel in the South—one, the presence of an excessive amount of silicon in the iron, and the other, the absence of scrap. Both of these obstacles have been removed by the Talbot process, which thoroughly removes silicon.

These facts lead to the belief that there is no reason why the South should not commence to convert a large percentage of its pig iron into steel, except a lack of enterprise or the admission that there is not

sufficient ability to do what others have done in England, France and Germany, and what is now being done north of the Ohio river. That it will take a large outlay of money to construct and operate a plant of sufficient capacity to do this work is admitted, but while this is true, the returns would be so great to the section making the investment that it is confidently asserted that any large railroad system traversing the iron district, or even the cities of Chattanooga or Birmingham, could afford to build a steel plant with a capacity of 500 tons per day and give it to a man to operate, while the profit on the investment would come from the increase in population and large number of manufacturing establishments which would inevitably seek location near such works.

It would also give the small manufacturer the materials that would enable him to come South and locate where he could get all the material necessary for the manufacture of almost any given article within such close proximity as to not only defy competition from points outside this section, but enable him to ship his products to outside markets. The transportation charges alone on the heavier articles would yield a good profit upon the investment. The lighter products, which always give employment to the greatest amount of skilled labor, could be shipped to more distant markets, although taxed with the additional transportation charges, and the producer compete successfully not only in all the markets of our own country, but in the near future do a large export business through our Southern ports.

The demand for such a plant is so imperative and the benefits to accrue are so great that it seems incomprehensible that some united effort is not made in this direction. In concluding his letter Mr. Shook asks the co-operation of Colonel Colyar in stimulating people to action on this important subject.

### Southern Iron Notes.

COL. THOMAS SHARP, of Nashville, and associates have obtained a lease of the North Alabama Furnace at Florence, and will make necessary repairs to same and put it in blast about the first of the year. To carry out their plans, which include the development of ore banks at Iron City, Tenn., they have organized the Spathic Iron Co. with the following board of directors: H. W. Butterff, Jas. L. Gains and Thos. Sharp, of Nashville; F. B. Nichol, Bessemer, Ala., and Oscar Marschuetz, of Louisville, Ky. Thos. Sharp was elected president, and H. W. Butterff, secretary and treasurer.

THE Southern Brass & Iron Co., of Knoxville, Tenn., has accepted its charter and elected Peter E. Blow, president; W. H. Thomas, vice-president, and E. T. Manning, secretary, treasurer and general manager.

THE Lookout Rolling Mill, at Harriman, Tenn., made a remarkable run on the 9th inst. by turning out 74,071 pounds of  $\frac{3}{4}$ -inch round iron. It is an 8-inch mill. The company has just received an order for the shipment of 1,500 tons of car iron.

THE Roane Iron Co., of Rockwood, Tenn., has authorized the issuance of \$350,000, the proceeds to be used in the construction of new iron furnaces and coke ovens.

THE South Boston Iron Works has contracted with the Norfolk & Western Railroad for the shipment of 140 carloads of machinery from Boston to its new plant at Middlesborough, Ky.

THE Philadelphia furnace at Florence, Ala., the property of the Florence Cotton & Iron Co., was put in blast on the 19th instant.

THE Campbell's Creek Coal Co., of Malden, W. Va., is about to test electric haulage in its old mines on Campbell's creek.

### Improvement of Coke.

[From the *Engineering and Mining Journal*.]

The increasing demand for better coke is reacting upon the producers of bituminous coal in a manner at once surprising and gratifying. It is surprising in that it comes so late into action, and gratifying in that it comes at a time when it is much more sure of a careful consideration than at any time, perhaps, within the past ten years. The economies that have in a measure been forced upon the producers of pig iron have extended to every department of the industry, so that it is probable that at the present time pig iron of all grades is being made more cheaply than ever before in the history of the country. This has been brought about partly by the natural desire of manufacturers to limit their expenditures as narrowly as possible, and partly by the low prices that have prevailed during the last two years. The economies practiced have arisen, therefore, in part voluntarily and in part through outside pressure.

Manufacturers of pig iron are demanding and securing a better quality of ore, and lower transportation rates and lower furnace charges per unit of iron are the consequences. They are demanding and securing greater skill in the management of furnaces, and the betterment of the quality of the iron is the consequence. But in the fuel employed there has not been so marked an improvement. We do not speak of anthracite furnaces nor of those using the higher grades of coke, such as Connellsville and Flat Top, but of those which are cut off by reason of freight charges from all but second grade coke, and even third grade in a few cases.

Coke that contains on the average over 1 per cent. of sulphur and 10 per cent. ash cannot be considered strictly first grade, no matter what its burden-carrying capacity may be, whether 400 pounds per square inch or 1,000. Its use is attended with increased cost, whether we look at the matter from the standpoint of the chemist or that of the furnaceman. It may be stated as an axiom that the greater the content of sulphur and ash the greater the cost of the coke.

Physical betterment of the coke, occasioned by the pulverization or crushing of the coal previous to coking, increases its value. Such improvement is not to be despised, especially in coke destined to much transportation or breaking of bulk. The ash-producing parts of the coal are more evenly distributed through the coke; there is less danger of powdering, as the coke is firmer and stronger, and when it breaks it does so in pieces of more uniform size.

What may be termed "overheating," that is, coke burned past the point at which combustible matter is given off, which for most coking coals is forty-eight hours in the beehive oven, sometimes increases the resistance of the coke to crushing strain without otherwise affecting it, so far as was observed. In one case before us the 48 and the 72-hour coke made from the same coal, of the same degree of fineness, showed a difference of 400 pounds per square inch in crushing strain in favor of the 72-hour, while there was scarcely any difference in chemical composition. The 48-hour withstood 700 pounds and the 72-hour 1,100 pounds crushing strain per square inch. In this case there was no gain in continuing the coking process beyond forty-eight hours, as a coke that will stand 700 pounds per square inch crushing strain is quite strong enough for any ordinary purposes. Indeed, it may be said that an improvement in the physical quality of coke as regards crushing strain, that is, to bring it above 500 pounds, need not be considered.

Of the dry methods for improving coke, the only one that seems to be worthy of

attention is the pulverization of the coal. A company operating more than 450 beehive ovens informs us that since it began to pulverize the coal to the fineness of meal there has been a marked improvement in the coke, not so much in chemical composition as in structure, a very important item. Then again, it has been observed that the coking quality of a coal is improved by fine crushing. Some coals that coke badly when charged as "run of mine" or even as "slack" are greatly improved by crushing. This would be the case particularly with slaty or dirty coal, as the comminution of the particles would allow the bituminous or coke-causing ingredients to sinter the mass more firmly together. It must be borne in mind, however, that crushing does not remove any impurities from coal. All that is done is to better the structure of the coke. This is very important, but does not affect the fundamental question of purer fuel.

### Coal and Coke Notes.

THE extensive coal mines being opened at Buckhannon, W. Va., will for the present be operated to supply local demand. Mining for shipment will be introduced later on.

MR. S. B. CORBETT proposes a thorough development of the 200 acres of coal lands lying between Capon Springs and Winchester, Va., which he has purchased.

THE Belington (W. Va.) Coal & Coke Co. is preparing to build its 100 new coke ovens near Belington.

A NUMBER of capitalists connected with the Cape Fear & Yadkin Valley Railroad propose developing coal mines at Coal Creek, west of Richlands, Va.

THE Poplar Creek Coal Co. met at Knoxville last week and elected Messrs. E. J. Sanford, C. Cullen, S. B. Luttrell, T. H. Heald and E. R. Chapman as directors. E. J. Sanford was elected president, and T. H. Heald, secretary and treasurer.

THE Norton Land & Improvement Co. is developing a coal mine near Norton, Va., and will by the early spring have it in full operation, employing 300 men.

COL. J. H. ALLEN, of Kentucky, is preparing for the early development of the 2,500-acre tract of coal land which he recently purchased near Norton, Va. A battery of 100 coke ovens he expects to complete by April.

THE exports of coal from the port of Norfolk, Va., from January 1, 1892, to November 17, 1892, as cleared by William Lamb & Co., agents at Lambert's Point, were as follows: Foreign exports 2,054½ tons, coastwise 30,053½ tons; total for week ending the 17th, 32,108 tons. Total amount to November 17, 1892, inclusive, was 1,402,170 tons.

CAPITALISTS of Superior and Duluth have purchased 55,000 acres of coal lands in Kentucky from Proctor Knott and associates and propose an extensive and thorough development of the property immediately. The company to be formed will have a capital stock of \$10,000,000, and Mr. C. K. Lawrence, of Superior, Wis., will superintend the work of development. Docks are to be built at Superior and a distributing point for coke established.

THE Mobile (Ala.) Transportation Co., which was organized some time ago, will soon commence the construction of extensive docks having slips 300 feet long. The company's property includes about 1,000 feet of water front in Choctaw swamp with a depth of twenty-four feet. Contracts for large shipments of coal to Vera Cruz have already been made, and the company has had plans prepared for a fire-proof bonded warehouse and coal chute of 40,000 tons capacity daily. The construction of a belt line of railroad is included in the company's plans. Mr. C. L. Huger is president of the concern, and Mr. A. W. Swanitz, of Chicago, consulting engineer.



## RAILROAD NEWS.

[A complete record of all new railroad building in the South will be found in the Construction Department, on pages 346 and 347.]

## Baltimore &amp; Ohio.

The annual meeting of the stockholders of the Baltimore & Ohio Railroad Co. was held in Baltimore on November 21. All the directors were re-elected without opposition, and President Mayer will undoubtedly be re-elected when the board meets on December 31. The sixty-sixth annual report of the company was submitted. The fiscal year of the company now terminates on June 30 instead of September 30, and figures are given by the report covering the nine months ended June 30 and the year ended September 30. The total mileage of the system is 3,323.78 miles, of which 1,072.11 miles are west of the Ohio river. Included in the mileage are 721.31 miles of sidings and 603.07 miles of second, third and fourth tracks. The operations for the twelve months ended September 30, 1892, show total earnings of \$26,034,167.76, an increase of \$1,503,772.85 over the previous year. The total expenses for the same period were \$18,595,801.14, an increase of \$1,517,568.28, and making net earnings of \$7,438,366.62, a decrease of \$13,795.43. The available income, which excludes the net earnings of the Washington branch, for the year was \$9,098,941.34, an increase of \$577,668.93. The interest, rentals, taxes and other charges for the year amounted to \$6,639,222.17, an increase of \$210,124.33, leaving a balance of \$2,459,719.17, which is \$367,544.60 more than the same figures of the previous year. This balance was devoted to the payment of dividends on the preferred and common stock, aggregating \$612,428.75, and the retiring of bonded indebtedness to the amount of \$674,057.81, leaving a surplus of \$1,173,232.61. The tonnage for the year with September estimated was 15,657,596, against 14,858,972 for 1891. The statement of the entire funded debt of the system shows a total issue of \$84,653,224 of bonds. The interest payable for the nine months amounts to \$3,261,970.08, which figures, however, do not include \$4,274,000 of Baltimore & Ohio consolidated mortgage bonds. The sinking funds aggregate \$11,490,188, which makes the net bonded indebtedness of the entire system \$73,163,036. The net cash outlay for interest on funded debt for the nine months ended June 30 was \$3,071,425.88. The company expended during the year \$2,061,604.94 for construction and betterments, an increase of \$459,702.88 over 1891. This large expenditure is in accordance with the policy of the management to establish and maintain its lines on a high standard of excellence.

## An Important Railroad Project in the Southwest.

The preliminary work for an important line of railway has lately been undertaken in the Southwest, having in view the opening up of the rice lands of Southeastern Texas and the long-leaf pine country of that section and Southwestern Louisiana.

The railway is intended to start from the shore of Galveston bay, opposite the city of Galveston, and extend to Alexandria, La.

The country to be traversed for the first seventy miles is susceptible of being made one of the richest fruit and rice countries in the South, being a rich arable prairie country now filling up rapidly with rice and fruit growers. Attention to it has been drawn more particularly this year by the extraordinary yield of rice to the acre, which is causing a large influx of rice planters from the lower parishes of Louisiana. An idea of the rapid increase in the production of this staple may be obtained when it is considered that the city of New Orleans estimates

this year's receipts at not less than 2,000,000 sacks of that important product, the milling and jobbing of which is now one of her most remunerative industries. The merchants of Galveston, recognizing the capabilities of this new section, propose to occupy the territory with the road in question with a view to controlling the trade. Beyond the rice district, on its way to Alexandria, the proposed road would penetrate the celebrated long-leaf pine forests of the Sabine river district, passing through the counties of Jasper and Newton, in Texas, and through the parishes of Calcasieu, Vernon and Rapides, in Louisiana. The estimated amount of long-leaf pine now standing in that country is in the neighborhood of nine billion feet B. M. There is besides a large supply of the finest white oak and other woods suitable for furniture to be had on the streams, as well as a large supply of cypress.

The connection at Alexandria would, it is stated, give the most direct and shortest route between Texas and Mexico and the large cities of the East. It would, no doubt, be an important link in a through connection between the points named upon the completion of the road now partly built between Natchez and Alexandria. A reconnaissance of the route has just been completed, and we understand the engineer's report is quite favorable to the project. As Galveston is wealthy enough to build the road herself, if she so desires, it is expected to see early action taken, the merchants being desirous of handling the large rice crop in sight and of making their city an export point for this vast body of long-leaf pine lumber which this road would develop.

## Richmond &amp; Petersburg Annual Meeting.

The annual meeting of the Petersburg Railroad stockholders was held at Richmond, Va., on November 21. The report of the president made the following financial exhibit: Gross earnings for the year, \$532,462.51; expenses, \$296,607.10; net balance, \$235,855.41.

After the meeting of the Petersburg stockholders the Richmond & Petersburg stockholders had their annual meeting. The report of the president made the following showings of receipts and expenditures: Gross receipts from transportation, \$369,447.73; operating expenses, \$243,150.22; net receipts, \$126,297.51; rents and interest received, \$9,020.02; total, \$135,317.53; net surplus, \$28,717.53. The sum of \$49,957.29 was expended for new property. Fred R. Scott was re-elected president, and H. Walters, vice-president, with the following board of directors: W. T. Walters, Henry Walters, B. F. Newcomer, Dr. D. W. Lassiter and W. G. Elliott. The board of directors were authorized in their discretion to build a double track between Richmond and Petersburg. The board elected W. R. Jones, treasurer, to fill the vacancy caused by the resignation of M. W. Varrington.

## A New Southern System.

There has been for some time a movement under way for the amalgamation of four Southern roads, and by the building of several links a new railroad system would be formed in the South. The plan has been engineered by Newman Erb, receiver of the Kansas City, Wyandotte & Northwestern Railroad, and a young railroad man of recognized ability. The plan provides for the consolidation of the Chattanooga Southern, Marietta & North Georgia, Knoxville, Cumberland Gap & Louisville and the Morristown & Cumberland Gap roads under the name of the Tennessee, Alabama & Georgia Railway. Mr. Erb has made substantial progress with the movement, and among those named as interested are H. A. V. Post, of New York city, who is chairman of the reorganization

committee of the Marietta & North Georgia; Thomas Carmichael, of London; Walter Stanton, of New York, and E. E. Dennis, of Philadelphia. A majority of the bonds and stock of the Marietta & North Georgia have been secured and it is intended to extend this road from Marietta to Atlanta. The Morristown & Cumberland Gap is to be built from a point near Tate Springs, Tenn., to a connection with the Norfolk & Western at Bristol, Tenn., and the Chattanooga Southern is to be extended from Gadsden to Birmingham, Ala. The Marietta & North Georgia is also to be extended to Chattanooga, according to the plan, the extension starting from Twin City, Tenn. The committee which has the work of reorganizing the Marietta & North Georgia announces that the reorganization plan has become effective. With the exception of the Knoxville, Cumberland Gap & Louisville, the roads that are to make up the new system are in the hands of receivers, and the carrying out of this plan will, it is believed, make what are now poor-pay roads into a very profitable system. Its terminal points would be Birmingham, Chattanooga, Atlanta, Bristol, Morristown and Middlesboro, from which cities connections could be arranged for all places North, East, South and West.

## Railroad Notes.

APPLICATION has been made to the Chancery Court at Chattanooga, Tenn., for a receiver for the Dunlap Coal, Iron & Railway Co., which was incorporated in 1890 with a capital stock of \$50,000.

THE early construction of the line of railroad from Savannah, Ga., to Hart's Roads, Fla., which is to connect the Florida Central & Peninsular with its recently-leased property, the South Bound, seems assured, and it is stated that contract has already been let. By the acquisition of the South Bound and the building of this link the Florida Central establishes a new air line from the North to the South via Columbia, S. C., Savannah and Jacksonville, Fla.

THE Norfolk & Western's outlay for new equipment for the current fiscal year will, it is stated, approximate \$3,000,000, but notwithstanding this large increase, the increase of traffic still keeps ahead of its facilities. The lengthening of the company's lines will require more trains, and the ordering of more cars and more engines is now being considered.

It is stated that a statement as to the cost of building the line which has been surveyed from Wadesboro to Winston, N. C., by the Atlantic Coast Line will be submitted at a meeting of the officers of that system to be held on November 22.

A GENERAL meeting of the stockholders of the Atlantic & Danville Railway Co. will be held at the office of the receiver in Portsmouth, Va., on December 20.

THE suit of S. Thomas, of New York, against the Mobile & Birmingham road for debt, was dismissed in the chancery court at Mobile, Ala., and the receiver, T. G. Bush, discharged. Immediately after, however, the Central Trust Company of New York filed a bill in chancery to foreclose the mortgage of the Mobile & Birmingham road, amounting to \$4,500,000, on the ground of its failure to pay the interest on the bonded debt. Mr. Bush was again appointed receiver.

AT the annual meeting of the stock and bondholders of the Port Royal & Augusta, recently held, H. M. Comer was re-elected president, and Ed Workman, secretary.

THE freight car famine is still being experienced in the South, and the calls for cars from cotton shippers, lumbermen and coal mines cannot be complied with.

AT a meeting of the stockholders of the Owensboro, Falls of Rough & Green River Railroad, held at Owensboro, Ky., on No-

vember 12, a resolution was adopted authorizing the directors to issue \$6,000,000 of 50-year gold bonds to build the road to Middlesborough, Ky.

A JACKSON (Miss.) dispatch says: "Judge Miles, of the United States Circuit Court, has decided that the Georgia Pacific Railroad must pay the State of Mississippi \$75,000 in back taxes. The suit was brought by the State revenue agent in the State courts, but the road's attorney had the case transferred to the United States Courts."

THE Missouri, Kansas & Texas, when it absorbed the property of the Parsons & Pacific Railroad Co., secured a charter held by that company to build a railroad from Coffeyville, Kan., diagonally across the Indian Territory to Vernon, Texas, a distance of about 300 miles. It is now reported that the company will utilize this charter and commence the construction of this line early next year.

TRAFFIC arrangements have been made by the Chicago, Rock Island & Pacific with the Houston & Texas Central which provides a new all-rail route from Chicago to the Gulf. The traffic is to be interchanged at Fort Worth, where additional terminals will be built.

## Mexican Notes.

THE purchase by C. P. Huntington of the Durango (Mexico) iron ore property, with the charcoal furnace and other works, is an earnest that extensive improvements and developments will be made there. Controlling, as he does, the Mexican International Railroad, the iron deposits of Durango and valuable coal fields near Piedras Negras, he will have every opportunity of building up an extensive iron and steel industry. Besides this important commodity, Durango is well located for other classes of industrial work, and is not far from important silver mines. Tin, it is said, has been found near there, though the prospecting was not thorough enough to prove its quantity. Besides the wealth in its soil, Durango has a delightful climate, and owing to its elevation, a most healthy one.

\* \* \*

H. C. RIPLEY, of Galveston, Texas, who has recently returned from Tampico, Mexico, says that work on the jetties at Tampico is nearly completed. They are about 1,000 feet apart, and the volume of water discharging between scours the river-bed so as to make the channel deep enough for ocean steamers. Surrounding the city there is a great deal of marshy land, but this will be drained, and when done the trouble from malaria will be greatly reduced.

\* \* \*

SPEAKING of the City of Mexico, Mr. Ripley says it lies in a saucer-like depression surrounded by mountains and hills. This location once was the site of a lake, and the city was on an island in its centre. This basin is about sixty-five miles by twenty-five on an average. There is being built through one of the hills an immense tunnel about a mile in length. This tunnel is through solid rock. Its purpose will be twofold—it will be used to carry the sewage and waste water of the city and will be a relief against floods. Back of the city, and not many miles distant, are two lakes, one higher up among the hills than the other. When the highest one gets full and overflows the water runs into the one below. When the other lake overflows it floods the city. A canal is being built from the lower lake so that at a certain stage of the water the overflow will run through this tunnel now being built, thus relieving the city from all danger. It is a big undertaking.

MESSRS. CARRIER, MOISEN & Co., of Brookville, Pa., have leased and will operate the entire plant of the Watauga Boom & Lumber Co. at South Watauga, Tenn.

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BALTIMORE, NOVEMBER 25, 1892.

### Notice to Advertisers.

The last forms containing advertisements  
are closed on Tuesday afternoon. New adver-  
tisements or changes should be received not  
later than Tuesday noon to ensure attention  
in the issue bearing date of the following  
Friday. Reading matter should be in our  
office on Wednesday, although late news can  
be received early Thursday morning.

THE Southport grain elevator near  
New Orleans has been turned over by  
the builders to the Illinois Central sys-  
tem, which includes the Yazoo & Mis-  
sissippi Valley road. The completion  
of the additional elevator gives the  
Southport plant a total grain storage  
capacity of 500,000 bushels. With the  
new plant five cars of grain can be un-  
loaded at a time, and the delivery to the  
steamers can be carried on while the  
unloading is in progress. The elevator  
can easily deliver 8,000 bushels per  
hour. The original elevator of the Mis-  
sissippi Valley at Southport had only a  
capacity of 200,000 bushels, so that the  
additional house will enable both the  
Memphis roads in the system to greatly  
increase their business.

HERE is an interesting paragraph  
which is now going the rounds credited  
to the Omaha Bee:

There are twenty well-built towns in Kansas  
without a single inhabitant to waken the echoes  
of their deserted streets. Saratoga has a \$35,000  
opera-house, a large brick hotel, \$30,000 school-  
house and a number of fine business houses, yet  
there is nobody even to claim a place to sleep.  
At Fargo a \$20,000 schoolhouse stands on the  
side of the hill, a monument of the bond-voting  
craze. A herder and his family constitute the  
sole population of what was once an incorporated  
city.

Agriculture alone will not give stable  
support to many prosperous towns. There  
is need for something more substantial  
than fertile soil and favorable climatic  
conditions. A season of bad crops  
means ruin, and a year of superabun-  
dant means low prices and depression.  
The greatest stability is afforded by  
diversified manufacturing interests,

which furnish constant activity and a  
large consuming community.

We find in one of the Columbia (S. C.)  
papers some very interesting figures of  
the agricultural products of South Caro-  
lina, which are furnished by Capt. Angus  
P. Brown, formerly of the State agricul-  
tural department and now of the weather  
bureau. Captain Brown gives the esti-  
mated crops for 1890 and 1892 as follows:

	1890.	1892.
Cotton, bales.....	681,340	521,376
Corn, bushels.....	16,462,416	22,310,680
Rice, pounds.....	68,091,944	107,368,800
Wheat, bushels.....	579,745	1,139,502
Oats, bushels.....	3,807,070	4,634,706
Cane sugar, gallons.....	349,291	873,000
Sorghum, gallons.....	822,378	1,131,680
Sweet potatoes, bushels.....	3,368,749	6,324,123
Peas, bushels.....	935,811	953,600
Irish potatoes, bushels.....	828,020	1,312,000

The tobacco crop for 1890 is not given,  
but the crop for 1892 is placed at  
3,530,400 pounds, the acreage being in-  
creased from 1,283 acres in 1890 to 4,413  
acres in 1892. Cotton is the only crop  
that shows any reduction, but the  
smaller crop of this season will be  
worth more in the aggregate and also  
yield a larger profit to the planters than  
last season's crop. The large increase  
in corn, rice, wheat and oats means a  
great deal to the people of South Caro-  
lina, and it shows how rapidly they are  
becoming self-reliant and independent  
of the West.

### The Profit of a Smaller Cotton Crop.

Since September 1 the price of cotton  
has advanced two and one-half cents per  
pound, from seven cents to nine and  
one-half cents for middling upland. This  
means that in nine weeks the cash value  
of this season's cotton crop has increased  
\$87,500,000, reckoning upon a yield of  
about 7,000,000 bales, which is now re-  
garded as a liberal estimate. Less than  
one-third of this season's crop has been  
marketed, and as there is prospect of an  
advance to ten cents or above, the pres-  
ent price probably represents a fair aver-  
age for the entire crop. If this be the  
case, and the assumption is conservative  
rather than extravagant, the 7,000,000  
bales of this season's crop will sell for  
nearly as much as the 9,000,000 bales  
produced last season. The average  
price during last season was seven and  
one-half cents, making the entire crop  
worth \$337,500,000, while at an average  
of nine and one-half cents the 7,000,000  
bales of this season will be worth \$329,-  
000,000. But the value of this season's  
crop represents far greater profit to the  
planters than the proceeds of last year's  
work, for the present crop has been  
raised at less cost than any crop pro-  
duced since the days when labor was  
counted as nothing.

Nor is this the full measure of the  
benefit that the South is reaping from  
the cotton crop of this season. The  
present crop has been produced by  
about 2,500,000 acres less than was re-  
quired to raise the crop of last year, and  
the immense acreage withdrawn from  
cotton is being cultivated for other crops.  
More corn, more wheat, more sugar and  
more rice are being raised in the South  
this year, which means more cash, by  
reason of less expenditure for food.  
With a cotton crop equal in value to  
that of last year, the South will gain the  
yield of 2,500,000 acres of additional  
food crops, besides a great increase in

sugar and rice. This is the most en-  
couraging feature of the Southern agri-  
cultural situation as it appears to-day.  
When we consider that in nine weeks  
the South has grown \$87,500,000 richer  
in the actual cash value of a single crop,  
it signifies a vast improvement in present  
conditions and business prospects.

### A Shipload of Florida Oranges for England.

The sailing of the steamer Ethelwold  
from Fernandina for London last week  
with a cargo of Florida oranges marks  
the inauguration of what will undoubt-  
edly develop into an important industry.  
The Ethelwold carried a cargo of 10,000  
boxes of selected fruit, which cannot  
fail to make a favorable impression  
upon the English market. Mr. E. L.  
Goodsell, of New York, who is carrying  
out this experiment, deserves a great  
deal of credit for his persistent enter-  
prise, and if he shall succeed in estab-  
lishing a market for Florida fruit in  
England he will place Florida under  
lasting obligations to him, apart from  
whatever profit he may make by the  
venture. The increasing supply of  
Florida fruit often brings it in excess of  
the demand in the markets of this coun-  
try, causing loss to the growers, but  
with such a foreign outlet as Mr. Good-  
sell is now endeavoring to provide, all  
surplus fruit could be easily disposed of  
at a profit without endangering the sta-  
bility of home trade. The prime neces-  
sity of the foreign trade is direct com-  
munication between the Florida ship-  
ping ports and the English market, but  
the promise of certain trade will speedily  
insure the establishment of whatever  
shipping facilities may be needed. In  
fact, we learn that Mr. Goodsell is so  
confident of the success of his first ex-  
periment that he has renewed the char-  
ter of the Ethelwold, and she will  
sail from Fernandina with a second  
cargo early in January.

Mr. E. O. Painter, editor of the *Florida  
Agriculturist*, of Deland, Fla., who  
was chosen to go with the steamer as  
supercargo, has kindly engaged to keep  
our readers informed of the progress  
and results of this experiment, and in  
his first letter, which was written just  
before sailing, he tells of the origin of  
the undertaking and describes the stow-  
ing of the fruit aboard the Ethelwold.  
Mr. Painter's subsequent letters will  
prove of much interest to our readers.

### Steel-Making in the South.

The letter which Col. A. M. Shook  
has written to Col. A. S. Colyar with  
regard to the need for the establish-  
ment of the manufacture of steel in the  
South, deals with a subject that has been  
widely discussed in the South, but which,  
nevertheless, is of vital interest and im-  
portance to that section. The important  
part that both of these gentlemen have  
taken in the development of the South-  
ern iron industry gives additional weight  
to what they have to say in this con-  
nection.

As Mr. Shook says, the movement  
from wrought iron to steel has been  
rapid since the introduction of the Bes-  
semer converter, and the latter is now  
available for almost every purpose for  
which iron formerly served. This move-  
ment is still going on, and while steel will  
never, in all probability, entirely replace  
wrought iron, its use will become even

more general than at present, and the  
sphere of wrought iron will become as  
limited as was formerly that of Bessemer  
steel. While this movement has been  
going on the South has been developing  
its iron resources only in the direction  
of making pig iron. The rails upon  
thousands of miles of Southern roads  
have come from Northern mills. The  
steel in the bridges, buildings and ma-  
chinery of all kinds has come from the  
same sources. Thousands, yes millions  
of dollars have been paid out in freights  
and profits to the Northern steel mills  
which would have remained in the South  
had steel been made there.

This matter and its importance have  
not escaped notice heretofore. As early  
as 1878 the Roane Iron Co. operated an  
open-hearth steel plant in Chattanooga.  
Their attempt was unsuccessful, owing  
to several causes, prominent among  
them an insufficient understanding of  
the requirements of the process as ap-  
plied to Southern pig iron. Since that  
time other trials have been made, one  
at the South Tredegar Works at Chat-  
tanooga in 1886, in which a single  
Clapp-Griffith converter was used;  
another by the Roane Iron Co. in 1887,  
this time with a Bessemer converter;  
later by the Henderson Steel Co. in  
Birmingham, Ala., using the Henderson  
process, which was essentially the same  
as the basic open-hearth, and still  
another trial at the Roane Iron Co.'s  
works in 1890, then owned by the  
Southern Iron Co. This latter attempt  
has probably been more complete than  
any preceding it, as the company changed  
the old open-hearth furnace into basic  
open hearths, put in a better equipment,  
and, with the Bessemer converter in the  
old mill, tried both the duplex and  
simple conversion in the basic open  
hearth. At the end of these trials the  
superintendent of the works went abroad  
to study the processes applied there.  
Since his return it is understood that he  
has been experimenting with a new pro-  
cess of his own, the essential feature of  
which consists in pouring the molten pig  
iron through a bath of highly basic slag,  
removing in this way the greater part of  
the silicon and some of the phosphorus.  
After this the metal is treated in the  
basic open-hearth furnace in the usual  
way. The details and practical results  
of these trials have never been made  
public, so that beyond the statement of  
the gentlemen interested there is nothing  
to prove or disprove what has been  
done, and it is impossible, therefore, to  
state what may be expected from this  
process. So far as can be learned, and  
from the opinions of those familiar with  
steel-making, it would seem that the  
duplex process is the one from which  
the most satisfactory results can be ex-  
pected.

A review of past attempts at making  
steel from Southern iron is not encoura-  
ging at first sight. But in every instance  
there are circumstances which may not  
be always known, but which materially  
alter the aspects of the failures that have  
been made. Through faults or errors  
which usually have been independent of  
the principles involved or the pig iron  
used, every attempt at making steel  
from Southern iron has thus far resulted  
in failure. The proof of this is the fact  
that no steel is being made from South-  
ern iron at the present time. These  
failures, however, have been due to lack  
of funds, errors of judgment, faults in



machinery and furnaces, but nowhere do we find any results that indicate the impracticability of making good steel from Southern pig iron, and making it, too, with entire success from a commercial as well as a technical point of view. Money and brains are the only essential factors.

That steel can be successfully made from pig iron made in the South there is not the least doubt, but it cannot be made from any and every iron. To produce the best results a careful selection must be made, and the furnaceman must select his ores and so operate his furnace as to produce the kind of iron needed. Whether low silicon and low phosphorus or low silicon and high phosphorus be wanted, ores are in abundance to make either, and it can and must be made. Almost any one of the numerous existing processes of making steel can be successfully applied in the South if care be taken to shape the conditions to suit the process, or if the process be selected to meet the existing conditions. The acid Bessemer process is probably the least adapted to average Southern conditions, but we believe that even this can be successfully utilized if the necessary requirements be fulfilled from the ore bank to the converter.

We repeat, it is only a question of money and brains, and when two such men as A. M. Shook and A. S. Colyar set themselves seriously to the task, success ought to be assured.

#### A Case of Distorted Vision.

An unprejudiced reader of the opinions regarding the probable effects of the recent election must be struck with the amusingly absurd views expressed by the extremists of both Republican and Democratic parties. On one hand we find a Democrat who unblushingly claims that the advance of two and one-half cents per pound in the price of cotton during the past twelve weeks has been due to the election of Mr. Cleveland, while on the other hand we are confronted by a Republican who confidently asserts that the defeat of President Harrison is the forerunner of disaster and ruin in the South. One is as absurd as the other. In the heat of their enthusiasm and in the depths of their depression, men in whose minds politics is uppermost forget that there are conditions apart from politics by which the growth of this country is affected.

In the last issue of the *Manufacturer*, which is the organ of the Manufacturers' Club in Philadelphia, there is a curiously distorted article on "The Results for the South," the purpose of which is to show that prosperity will now depart from the South for an indefinite period—perhaps forever. Under ordinary circumstances, when he stops to think before he writes, the editor of the *Manufacturer* is a man of intelligence and sound views upon many subjects, but under the inspiration of a strong political bias he has delivered himself of views that do him no credit. For example:

Business at the South is dull. The boom which so vigorously manifested itself a few months ago has spent its force, and of late complaints have been heard from every side of the suffering of the people from commercial depression.

The writer of the quoted lines is eighteen months or two years behind

the times. Within the last two or three weeks we have received hundreds of letters from prominent bankers and merchants in various sections of the South, who testify with one accord that the South is prosperous and that business conditions are better than they have been for two years past.

Read this:

The hope of the planter class is, perhaps, that the price of cotton will rise, but cotton is now cheap, not because of the tariff, but because of the demonetization of silver.

What nonsense. In the first place cotton is not "cheap" at present, having advanced from seven to nine and one-half cents since September 1, thereby increasing the cash value of the crop by about \$87,000,000. Cotton was very cheap last summer—cheaper than it has been for fifty years—but not because of tariff nor the demonetization of silver. It was cheap simply because there was too much of it, just as it is now dear because there is a prospect that there will be a scant supply. The price of the greatest crop raised in the South is governed by the law of supply and demand.

Another specimen:

No, not only is the Southern boom over, but it is ended for many years to come, and one of the most promising of the existing industries in the South—the wool industry of Texas—appears to be doomed to extinction. The South will remain for another generation an agricultural region, and its people will remain poor.

If by "boom" is meant the spasmodic speculations in town lots, in which some of the members of the Manufacturers' Club took a prominent part two years ago, we say amen. That boom fell flat more than a year ago; it should have collapsed when it first started. But we fail to see the connection between booms of any kind and the wool industry of Texas. We believe the sheep-raisers in Texas will be amply able to look out for their own interests, and furthermore, we do not regard that industry as in any danger of extinction. We venture to predict that it will not only hold its own, but expand and develop. Here is a thought that is suggested by the mention of the Texas sheep: The increase in the value of the Texas cotton crop during the past twelve weeks has been more than double the value of the entire annual wool clip of Texas, which, we believe, amounts to something like \$7,000,000 or \$8,000,000. The continuance of the South as a distinctively agricultural region depends upon where the line is drawn to distinguish between an agricultural and an industrial section. We are inclined to hold that the South has already passed from agriculture to industrial pursuits more closely allied to manufacture as the predominant element. We presume the census will show where the South stood in 1890 in this respect. The fragments already received give some indication of what is to come. For fourteen Southern cities we have manufactures of \$329,000,000 in 1890, as compared with \$192,500,000 in 1880. The manufacturing interests of these fourteen cities in 1890 equal the value of this year's cotton crop, and these cities include only a small fraction of the iron industry, none of the iron ore, coal and other mining interests, and only an insignificant portion of the great lumber and woodworking industries, which overtop all others. We do not believe that agriculture now predominates in the South. Will the people of the South remain poor for still another generation? They are far

from that at present, and wealth is increasing in the South at as rapid a rate as is healthy for any people.

The whole spirit, tendency and aim of this article in the *Manufacturer*, which we are discussing, is to demonstrate that Democratic supremacy means a sweeping removal of the tariff and the substitution of free trade for protection. While we cannot claim to be in the confidence of the guiding powers of the coming administration, we feel perfectly safe in predicting that there will be no legislation that will do violence to the manufacturing or commercial interests of our nation. No party can do that without suicidal results, and we credit our legislators, present and prospective, with possessing sufficient sagacity to discern this fact.

To conclude, we say, without fear of contradiction, that the South was never so prosperous as it is to-day, nor were the prospects for that section ever so full of promise and encouragement as they are at this time. You may ascribe these conditions to politics or any other cause that suit your fancy. The fact remains unchanged.

#### Atlanta's Growing Banking Facilities.

By Col. I. W. Avery.

Ten years ago Atlanta's banking capital was \$850,000; to-day it is over \$7,500,000. The increase in this decade in corporate and private banking capital has been nearly \$7,000,000. Then the surplus was \$350,000, and now it will run to \$2,000,000, increasing sixfold. The loan and discount total was then \$2,400,000, and now it will reach over \$10,000,000.

Ten years back the deposits were \$2,000,000, and now go to over \$8,000,000.

#### BANKS.

Atlanta National Bank, capital and surplus \$400,000, deposits \$1,200,000.

Atlanta Banking Co., capital and surplus \$200,000.

Atlanta Exchange & Banking Co., capital and surplus \$75,000.

Atlanta Guarantee Savings Bank.

Atlanta Investment & Banking Co.

Atlanta Trust & Banking Co., capital and surplus \$182,500, deposits \$165,000.

American Trust & Banking Co., capital and surplus \$550,000, deposits \$615,000.

Bank of the State of Georgia, capital and surplus \$145,000, deposits \$310,000.

Capital City Bank, capital and surplus \$500,000, deposits \$510,000.

Commercial Banking & Trust Co.

Corbin Banking Co. of New York, T. J. Felder, special correspondent.

Fidelity Banking & Trust Co., capital and surplus \$200,000.

Gate City National Bank, capital and surplus \$300,000, deposits \$846,000.

Georgia Security & Banking Co.

Georgia Loan, Saving & Banking Co., capital and surplus \$75,000.

Home Bank of Atlanta.

J. H. & J. L. James & Co., capital and surplus \$200,000, deposits \$70,000.

Lowry Banking Co., capital and surplus \$40,000, deposits \$1,100,000.

Maddox-Rucker Banking Co., capital and surplus \$150,000, deposits \$375,000.

Merchants' Bank, capital and surplus \$400,000, deposits \$775,000.

Merchants & Mechanics' Banking & Loan Co., capital and surplus \$120,000.

Mutual Loan & Banking Co., capital and surplus \$72,000.

Neal Loan & Banking Co., capital and surplus \$317,000, deposits \$745,000.

Southern Banking & Trust Co., capital and surplus \$300,000, deposits \$350,000.

Southern Exchange Bank.

Southern Loan & Banking Co., capital and surplus \$30,000.

State Savings Bank.  
State Savings Bank Co.  
Empire State Bank.  
Piedmont Loan & Banking Co.  
Exchange Bank, capital and surplus \$100,000.

#### PRIVATE BANKERS.

Cornelius Jordan.  
F. W. Miller.  
Henry R. Powers.  
J. Walter Kimball.  
Weyman & Connors.

#### LOAN AND BUILDING ASSOCIATIONS.

Germania, fourteen years old.  
Hibernia.  
Empire.  
Gate City Loan.  
People's Building and Loan, six years old.  
Mechanics' Building and Loan, six years old.  
Atlanta Building and Loan, six years old.  
State Building and Loan, five years old.  
The Standard, four years old.  
Fulton Building and Loan, five years old.  
Piedmont Building and Loan, five years old.

Mutual Benefit Building and Loan, five years old.

Union Building and Loan, four years old.

Hapeville Building and Loan, six years old.

Hapeville Mutual, three years old.

Atlanta, Edgewood, Kirkwood and Decatur, three years old.

Home Company of Atlanta, three years old.

Southern Mutual Building and Loan, five years old.

Southern Home Building and Loan, three years old.

Atlanta National Building and Loan, two years old.

American Building, Loan and Tontine.

Southern Home.

Interstate Building and Loan.

Eastern Building and Loan of Philadelphia.

Citizens' Loan and Building.

Equitable Building and Loan of Augusta.

Georgia Building, Loan and Savings.

National Railway Building and Loan.

National Tontine Building and Loan.

New South Building and Loan.

Mutual Aid, Loan & Investment Co.

Union Building and Loan.

Germania Loan & Banking Co.

In addition to her banks, Atlanta has the above thirty building and loan companies, loaning millions of dollars and building thousands of houses for men without capital, furnishing homes for laborers and adding to the taxable wealth of the city, besides drawing money from adjoining towns and States.

Atlanta has a large clearing-house for her banks.

E. B. GATLING, of Knoxville, Tenn., states that about 4,000,000 pounds of tobacco are handled there annually. The supplies are secured from Virginia, North Carolina and Western manufacturers. In speaking further of the trade, this gentleman says Knoxville presents an excellent field for a large tobacco factory if fully equipped with the most improved machinery.

THE Southern Cannery Association has been organized at Savannah, Ga., with A. H. Kohn, of Prosperity, S. C., as president; J. W. Emerson, of Lakeland, Fla., first vice-president, and Thomas Gamble, of Savannah, secretary. The association proposes to devote itself to promoting the interests of Southern cannerymen, and will hold a meeting next March, probably in Atlanta, to perfect a permanent organization. The canning industry is spreading rapidly in the South, and the necessity of such an organization as this has been felt for some time. An estimate of the number of cans packed last season in the Southern States is given as 35,000,000.

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## MECHANICAL.

### Friction and Lubrication.

By Albert D. Pents.

#### II.

THE first necessity of a fluid lubricant is that it shall have a mutual attraction for and with the surfaces it separates, and that the adhesion due to this attraction shall be greater than the cohesion of the molecules of the lubricant to each other. It will be seen that thus a fluid lubricant cannot be said to have sliding friction, but its particles may be said to continually be mixed or kneaded together, and if this kneading be greatly accelerated or maintained at a heavy pressure it is evident that considerable heat will be evolved, on the same principle that wire is heated in drawing it and a piece of lead is heated by squeezing it in a vise. The second necessity is that the fluid lubricant shall not carry nor contain anything that can corrode or dissolve the sliding surfaces. Thus water can adhere to iron, and it practically is void of internal cohesion. So far it is an acceptable lubricant, but because it always contains a limited corrodant of iron it cannot safely be used pure. When, however, its corroding qualities are neutralized by the addition of a suitable alkali it is one of the best lubricants for light service. Heavy service, however, must have a lubricant that is not so easily pressed asunder. It must have great cohesion or "body," so that it may not be squeezed out of the journals by the weight or pressure on these journals. Hence, oils or other heavy fluids are generally used because they have this adhesive quality as well as great viscosity, are non-corrosive and are capable of being made as fluid or as heavy as desired.

OIL as a lubricant may be considered as being one of three kinds, irrespective of its origin. It may be a solution which will harden into a varnish like linseed oil; it may be a solution like a paraffine oil which becomes a wax, or it may be oil continually and under all conditions like the fat oil of lard which hardens into a grease. The varnish oils are not good lubricants under any prolonged test, because they dry at all temperatures and leave the friction surfaces coated with an elastic integument. Many animal oils are largely charged with a natural gelatine, so that they become hard when dry after a long exposure on a metallic surface, which is little better than varnish. Lard oils have this quality when they are not carefully made in so low a temperature that this gum will largely remain back with the solid stearine. The wax oils are inferior to the fat oils, except it may be asserted that they are best where the temperature or the pressure is very great, and even then a long experience indicates that when their tough cohesion is overcome by heat, pressure or dilution, and thus becomes an inconsiderable factor, their value as separating media is probably inferior to the fats. While the fat oils are eminently safe as separators of surfaces, they are eminently viscid and develop an immense amount of resistance between their molecules, atoms, drops, or whatever kind of particles it may be that slip by each other when matter is in the fluid state. This viscosity is increased by pressure, cold and evaporation. It is obvious that all the resistance there may be noticed in any machine where the surfaces of the bearings are separated by lubricants which adhere to such surfaces with greater persistency than they cohere together internally is that due to the viscosity of the lubricant.

THE only value I have found in pure petroleum lubricants is initial cheapness. On a large iron planer there was tried pure mineral oils to see if there could be a saving made where animal oil had previously been used. The result was that when the

oil was heavy enough to keep the platen properly separated from the bed, the viscosity was so great that the backing belt complained of it, and where the oil was fluid enough to satisfy the power, then the metals would get into actual contact and cut.

THE reason that the combination oils are successful seems to be that their fluid mineral constituents are excellent dilutants of the fat oils, and serve well as vehicles to distribute them over large surfaces in economical quantities.

IT must be kept in mind that the proportion of oil wasted to that worn out is infinite. I made a pulley which had an automatic oiling device within it, which device is arranged so that oil taken from an annular pocket about the shaft upon which it rotates and fed to the bearing is carried the full length of that bearing and then is returned to the pocket to be used over again. This pulley, with perhaps three ounces of oil in its pocket, was started at 1,200 revolutions per minute, and ran ten hours each working day and much overtime until more than 200,000,000 revolutions were made by it with no additions to the lubricant. Then it was examined, and there seemed about as much oil in the pocket as at first. The oil, however, was very dark in color and quite viscid. Now, if this pulley in that time had been oiled 600 times it would have taken perhaps two quarts of oil, while, in fact, it actually consumed but an inappreciable part of three ounces.

IT is obvious that if the mineral hydrocarbons in combination oils are of value principally to distribute the fats which are the real lubricants, that they are quite expensive media for that purpose, and if, as is evidently a fact, this method of dissolving fats is an economical one, there may be found a dilutant as good and perhaps better, and which is infinitely cheaper. This idea, of course, at once suggests the combining of the fats with water.

IN the admixture of water with fat oils, it is fortunate that the same means which may neutralize its corroding quality for iron chemically serves to combine the two fluids and greatly reduce the viscosity of the fats at the same time. Thus, an emulsion made of 5 per cent. of lard, with water and just enough of caustic soda to combine them, is an excellent lubricant, especially for use in cutting tools. In fact, the addition of about one pound of sal-soda alone to eight quarts of water (a pailful) is good, and it is used to lubricate the tools in water-polishing wrought iron and soft machinery steel. Alkaline waters are not novel lubricants, neither are the triple compounds of water, a fat and an alkali, but they are not so well known as they deserve to be or as they will be when they are investigated for efficiency and economy. I believe that soapy compounds made of clean fats, suitable alkali and diluted with water to the required consistency are superior and economical lubricants. If they are found to be the best there will be but little surprise expressed by me. Their cheapness, comparative freedom from viscosity and their habit of keeping bearings cool are desirable qualities and rare ones.

#### Improved Machinery and Workmen's Wages.

[C. R. Tompkins in *Engineering Magazine*.]

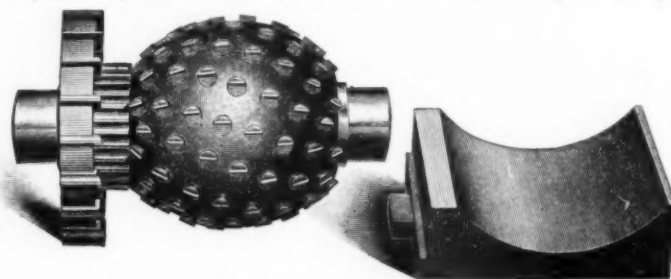
WE often hear predictions from a certain class of men that the advance in the art of woodworking, as well as in other mechanical branches, and the introduction of labor-saving machinery will eventually reduce the wages of the workman. It is safe as a rule to judge the future by the past, and we have already seen that the introduction of labor-saving machines, so far as the building business is concerned, has not only increased the demand for skilled workmen,

but more than doubled their wages for fewer hours of labor. What is true with the woodworking trades is equally true with every other branch of mechanics where skilled labor is required. As late as the year 1856 first-class machinists could be hired at \$1.75 per day, and the necessary machinery for a planing mill or other woodworking establishment was little, if any, cheaper than at the present time, although there is nearly double the work upon a modern planing machine that there was upon machines of that date. There is no question but with the present facilities a manufacturer would be able to put upon the market machines of the style of 1856 at much less than they were then sold for. Now machines of more than double the capacity of the former, with all modern improvements and conveniences, are afforded at about the same figures that were charged for them forty years ago. While manufacturers are realizing about the same profits as formerly, they are paying for the same class of skilled labor from \$2.50 to \$3.00 per day. This change has been brought about by the countless labor-saving devices that have been introduced into the modern machine shop, whereby one man with less manual labor is enabled to turn out double the amount of work in a given time; still, the market is not overstocked with first-class machinists. Therefore, it does not appear that the introduction of labor-saving machines has had an injurious effect upon machinists' wages. The same rule will apply to every other branch of mechanical business. Experience has proved that the introduction of any mechanical device that will lessen the cost of production and enable the producer to put upon the market an article at less price or a superior article at the same will in every instance increase the demand. Nowhere is this principle better exemplified than in the products of woodworking machinery.

#### A Special Milling Cutter.

WE present herewith an illustration of a gang of the Ingersoll patent milling cutters, made by the Ingersoll Milling Machine Co., of Rockford, Ill. These cutters were made for milling the guides of a Corliss engine, and a block which was milled in testing them was photographed with the cutters and is shown by the engraving.

The radius of the circular portion of the cut is four and one-half inches, and the cutter for this is eight inches in diameter. The other cutters are eight and one-quarter inches and four and one-half inches, respectively. The surface produced by these cutters is accurately and smoothly finished, and it is found that this method of forming the cutting edges of a number of small steel pins set into a cast centre is well adapted to any desired form. These



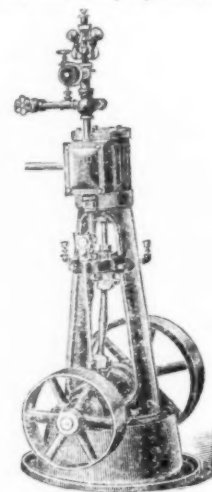
A SPECIAL MILLING CUTTER.

cutters can be made any diameter and width of face to mill work of any shape, such as crossheads, connecting rods, boxes, pillow-block caps, crank-pin boxes, etc. These cutters are also adapted to use on any milling machine.

#### The Clark High-Speed Engine.

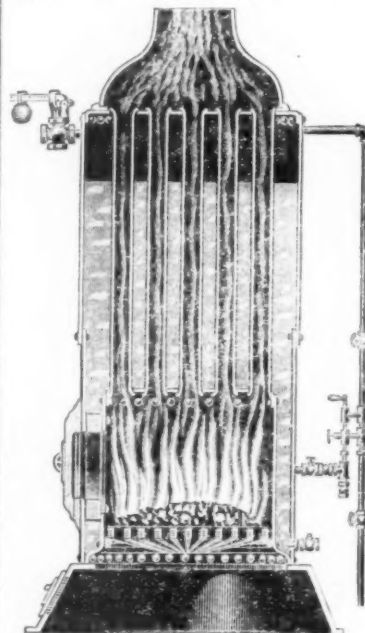
The accompanying illustrations show a new high-speed engine and boiler which has recently been designed and put on the market by George Clark, of Kalamazoo, Mich.

The engine is designed for light work, and is made in sizes varying from two to twenty horse-power. The illustration shows the engine with a throttle governor, but the company make them with



THE CLARK VERTICAL BOILER.

either plain or automatic cut-off valves, as desired. The firm is also getting out the patterns and will soon have ready to place on the market a new engine similar in design, but of the horizontal type, on which



THE CLARK HIGH-SPEED ENGINE.

they intend to place a recently-patented governor.

The boiler illustrated is of the vertical type and is made in sizes to supply the demand of the different engines. They are

made of the best quality steel and are tested to a tensile strain of 60,000 pounds per square inch. The engines can be furnished on separate or combined base, and also are made mounted on trucks.

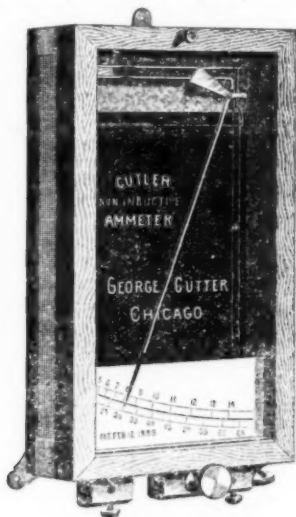
#### The Cutler Non-Inductive Ammeter.

One of the most important instruments in connection with an electric-light or power-generation station, and one which is almost indispensable in running arc-light dynamos, is the ammeter. As the life of



the carbon filament in an incandescent lamp depends on the volt meter, so it may be said, in a restricted sense, that the life of the carbon in an arc lamp depends on the ammeter.

The ammeters now on the market all have the objection that they depend on a



THE CUTLER NON-INDUCTIVE AMMETER.

magnet for their action, so that their readings are easily affected by the large masses of iron present in all central stations. Even where they can be used at a distance from the dynamo room, it is found that the magnets in two such instruments placed side by side on a switchboard will spoil each other's readings; further, the accuracy of magnetic instruments is affected by a change in the speed of the dynamo, this being specially noticeable with alternating currents.

For these reasons there has been a call for non-magnetic ammeters, and this seems to be met by the one designed by Mr. H. H. Cutler, of Chicago, Ill. This depends for its action on the difference in expansion between two fine wires, one of which is traversed by the current to be measured, while the other compensates for changes in the temperature of the room. For heavy currents a shunt is placed at the back of the instruments, so that the same small size of wire can be used. The two wires are fixed at one end, and are kept taut by flat springs carrying knife edges. A yoke resting on these bearings carries a light pointer, the leverage being such that quite a small expansion of the measuring wire will move the needle across the scale. This instrument is practically deadbeat, and is not affected by any amount of iron masses near it. It is equally accurate for direct and alternating currents, and has been thoroughly tested in practice during the past six months.

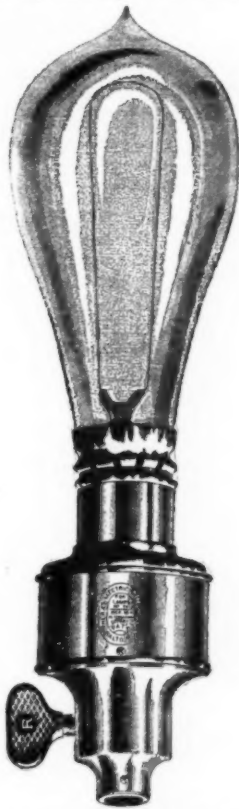
The illustration shows a double scale ammeter reading up to sixty-five amperes, and it will be noticed that the scale is much longer than on most instruments. The Cutler non-inductive ammeters are built in sizes ranging up to 160 amperes, to meet the varied requirements of different stations, and are put on the market by George Cutler, of Chicago.

#### The Ries Regulating Lamp Socket.

At this advanced age it is useless to enter into any extended argument to prove the advantages of incandescent electric light over gas. It is unquestionably destined to be the future light, almost universally in the factory, the workshop, the office and in the homes of the people. Heretofore it has been impossible to regulate the amount of electricity consumed; the consumers have had no option but to turn on the light "full blast" or to extinguish it entirely. In many cases this meant the consumption of more light than was required, wasting the current, and in every case necessitating frequent renewals of the lamps. Besides

this the extreme brilliancy of the light in its full strength is trying to people with weak eyes, and heretofore there was no choice or medium between the full power and utter darkness.

Mr. Elias E. Ries, of Baltimore, Md., has overcome these objectionable features by an ingenious piece of mechanism called the Ries regulating socket. The candle-power of a lamp can, through its agency, be reduced from its maximum brightness to a dull red glow with a considerable saving in current and no doubt an increase to the life of the lamp. Thus each individual lamp is under perfect control and the light can be regulated to a point that makes it grateful to the weakest eye. An important point is that the amount of electrical energy required by the lamp varies according to



THE RIES REGULATING LAMP SOCKET.

the light given, and can be reduced from fifty watts to less than five watts, which, of course, makes a corresponding reduction in the cost per light. The importance of these features, not obtainable by any other known method, are apparent to those familiar with the incandescent lamp, and the advantages of this socket will be readily appreciated.

Apart from the advantages of regulation, this invention commends itself on the ground of economy, as where the current system is sold by the meter system the consumer has the satisfaction of knowing that he is paying only for what he actually uses, there being no "resistance" or other current-consuming devices in the socket to waste the current. These sockets are made to fit standard incandescent electric lamps of any make, candle-power or voltage. The Ries Electric Specialty Co. have their office at Baltimore and Eutaw streets, Baltimore, Md.

MR. JOHN L. OGLESBY, of the Brokers' Tobacco Warehouse, Lynchburg, Va., makes the following statement as to tobacco sold:

Sold week ending November 12, 1892.....	121,300
Sold week ending November 19, 1892.....	734,500
Increase week ending November 19.....	611,200
Sold from Oct. 1, 1892, to Nov. 19, 1892.....	1,044,700
Sold from Oct. 1, 1891, to Nov. 19, 1891.....	510,800
Increase for 1892.....	533,900

THE Congaree Manufacturing Co., of Columbia, S. C., will hold a meeting of stockholders on December 21 to consider an increase of its capital stock and the issuance of bonds.

## COTTON MARKET.

NEW ORLEANS, LA., November 19.  
Editor Manufacturers' Record:

In our last we referred to the anti-option bill as likely to be a disturbing element to the cotton market, but we did not anticipate that its effects would be evidenced so soon after our calling attention to the threat being made by the bears, for whose especial benefit it would appear that legislation of that character must be intended. On one side there is a prospect of a crop of 6,500,000, with all the bullish feeling that would naturally be engendered thereby, giving encouragement to the holder of spot cotton by reason of the probable greater demand from spinners, and on the other side we have the short interest—the spinner—and the Hatch bill or some similar bill to be used as a depressing feature on the market continually. We think, however, the question is being brought home to the planter and all those interested in cotton in a very pronounced way of late, and the bearing of such legislation upon the value of cotton is being made more apparent daily, and if we remove the political features connected with all the discussion of the Hatch and Washburne bill at the last session of Congress we will find that, after all, there is little to fear of any legislative action in reference to the buying and selling of speculative commodities by what are known as future contracts. The importance of this character of business to the actual thing itself is being made very apparent this year, so far as cotton is concerned. An utterance of Mr. Washburne several days ago as to the re-introduction of his bill in the Senate caused the bears in this market and New York to depress the market, and on Thursday and Friday the decline from the highest was nearly fifty points. The reaction from the lowest of yesterday, however, to the closing to-day is fifty points, all due to the improvement in Liverpool, and also to a growing feeling that no restrictive measures, so far as anti-option bills are concerned, can be passed by the present Congress.

With a crop of 6,500,000 bales, which is now becoming a not unlooked for supply, it means that about 600,000 bales will have to be retained in the New Orleans and New York markets to protect the short interest. It is a safe calculation to say that 400,000 bales at least will be bought for investment, which will leave 5,500,000 bales to provide for the world's spinning requirements, to which is, of course, to be added the surplus carried over from the last crop, but there has already been 2,860,000 bales brought into sight according to the report of our exchange yesterday. It is therefore not surprising that the South is holding so tenaciously to her crop, such as it promises to be, which, when scattered over all of the cotton-growing States, and represented by the planters and merchants and bankers and capitalists, offers no weight whatever, but, on the contrary, it presents to them an opportunity of profitable investment, and if spinners are as bare of stock in Europe as they are represented to be, they will certainly have to buy cotton, and we think the South is in a position to dictate prices to a great extent.

Our advice is that spinners on the other side are getting uneasy. The possibilities of a short crop are really of an alarming character, and if anyone wants to see how strongly a crop under 7,000,000 is confirmed make a comparison with the amount coming into sight weekly from the 1st of September to date in 1887 and the movement this year to date from the 1st of September. The crop of 1887-88 was 7,000,000. The amount that had come into sight the 1st of December of that season was 4,053,000. The amount that had come into sight yesterday was 2,860,000 bales;

therefore, with only twelve days earlier than last year, we are practically 1,200,000 bales short. If these are not figures worth serious reflection for the bears then they are not people to be converted.

ATWOOD VIOLETT & Co.

CLOSING PRICES OF FUTURES NOVEMBER 22.

Months.	New Orleans.	New York.	Liverpool.
November.....	....	9.27	5 4-64
December.....	9.17	9.28	5 4-64
January.....	9.26	9.43	5 6-64
February.....	9.36	9.56	5 8-64
March.....	9.47	9.69	5 10-64
April.....	9.59	9.80	5 11-64
May.....	9.66	9.90	5 13-64
June.....	9.76	10.00	5 15-64
July.....	....	10.05	5 17-64
August.....	....	....	....
September.....	....	....	....
October.....	....	....	....
Tone of market.	Steady.	Weak.	Steady.

CLOSING PRICES OF SPOT COTTON NOVEMBER 22.

Grade.	New Orleans.	New York.	Liverpool.
Middling.....	9 3/4	9 3/4	5 3/4
Low middling....	9 1/4	9 1/4-16	5
Good ordinary....	8 3/4	8 3/4	4 3/4
Tone of market.	Steady.	Steady.	Firm.

#### Southern Textile Notes.

RUMORS are again rife of the erection of another cotton mill at Florence, Ala., and Mr. W. H. Zinn, of Boston, Mass., is mentioned in connection.

MESSRS. SCHMID & SEFTON's new batting factory at Terrell, Texas, has started up, and turns out 1,500 bundles per day.

PLANS for the erection of a \$50,000 or \$100,000 cotton mill at Gadsden, Ala., are being formulated by the citizens.

THE new \$600,000 cotton mill of the Dallas Manufacturing Co. at Huntsville, Ala., went into operation last week. Its equipment contains 25,000 spindles and 750 looms.

A. R. MARLETT, of Carrollton, Ky., has put in a loom for manufacturing rag carpets and has it in operation. Other looms to enable him to produce English cottage and ingrain carpets will be put in soon.

THE stockholders of the Spartan Mills, of Spartanburg, S. C., held their annual meeting on the 18th inst. and declared a semi-annual dividend of 3 per cent.

THE Alpha Mills, of Charlotte, N. C., manufacturers of warps and yarns, has received a letter from Cape Coast, Africa, asking for samples of its cloth.

MESSRS. BOYD & Co., who recently established a seamless bag factory at Reidsville, N. C., have organized as the Boyd Manufacturing Co. for the operation of the plant. The equipment includes fifty looms.

It is reported from Enterprise, Miss., that a cotton-knitting mill will be established there immediately. No names are mentioned.

THE erection of a knitting mill at Franklin, Ky., is projected. Representatives of the Franz & Pope Manufacturing Co., of Bucyrus, Ohio, manufacturers of knitting machines, are now in Franklin endeavoring to form a company.

At the coming session of the South Carolina legislature a charter will be applied for by North Carolina and South Carolina capitalists for the organization of a \$50,000 stock company to erect a cotton mill at Landsford. It is proposed to build a complete plant to be operated by water-power, and work on it will be begun as soon as the company can be formed.

THE Cedar Falls Manufacturing Co. has lately built a new brick cotton-house and placed in its mill a Denn warper and new openers and lappers from Potter & Ather-ton, of Pawtucket, R. I. This company manufactures 8s to 16s yarns and operates 4,000 spindles. Dr. J. M. Worth is president, and O. R. Cox, treasurer and superintendent.

## LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department, on page 346.]

### Poplar in Eastern Tennessee.

A correspondent of the *Northwestern Lumberman*, writing from Knoxville, Tenn., gives some interesting comments upon the methods of handling poplar timber, from which we take the following extracts:

A somewhat extended visit to and examination of the poplar-growing districts in Eastern Tennessee reveals the fact that operators are pushing further back into the mountains to secure such amount and quality of poplar timber as they need for their trade. The fact is unmistakably forcing itself upon operators in this section that the small tracts of the better quality of poplar timber within easy reaching distance of transportation has been cut. It is not unusual to see lumber hauled a distance of twenty miles on wagons, and over roads by no means equal to the boulevards of Chicago. Most of the best timber is now owned by those having tracts of 3,000 to 10,000 acres or more, and as they will not sell the timber without the land, it is not every logger or mill man who can buy such tracts. It is evident, therefore, that the poplar lumber business in the region where the largest amount of timber remains is undergoing a change and shaping itself so that in the near future there will not be so many of the small operators as at present. Larger operators, with ample capital, modern mill equipment and men with large experience, having knowledge of the wants of the trade, will hereafter be able to control the poplar lumber trade better than ever before.

The Poplar Manufacturers' Association is doing good work if in nothing more than in promoting harmony of action among the members and seeking to adopt the best methods for their good. Better prices will eventually be obtained as a result of the combined action of so many of the most intelligent and wide-awake millmen.

If there be any one reform needed more than another, it occurs to me that it is in cutting of the logs in the woods. Why most of the loggers will persist in cutting the logs ten and twelve feet long—mostly the latter length—is beyond my comprehension, unless it be that they like to work in the old grooves. The only apparent reason for cutting logs the lengths mentioned is because their grandfathers cut them that length. People living in rural districts, remote from centres of population, and especially those living in mountainous regions, are slow to get out of the old ruts. They live in a primitive manner, and not having been out in the world to see how other people live or work, do not know how to do different from their old accustomed ways. And yet it would appear that by the exercise of a little common sense they might see wherein they could change in many ways.

Last week while in the woods among loggers who were cutting sound, magnificent poplar timber, the instructions having been given to cut most of the logs fourteen and sixteen feet lengths, about an equal proportion of each, I was surprised to see nearly every log cut twelve feet long. When asked why they didn't cut them fourteen and sixteen feet the loggers replied that they couldn't handle logs over twelve feet long. There were logs thirty to sixty inches in diameter nearly all twelve feet long. I called their attention to having handled a 60-inch log, and said I couldn't understand why they could not handle a 30-inch log fourteen or sixteen feet long, but their only reply was, "Well, hit just kaint be done." The readers of this who handle poplar lumber and have been wondering why they always got a surplus of

12-foot lengths may find in this something of an explanation.

Not long ago I was pleased to see such old foggy or precise notions put aside in a most unmistakable manner. The logging for a certain mill was done by men who adopted the usual custom of using oxen for skidding and hauling. They said it was useless to attempt to use horses in skidding logs in a mountainous country. I asked them if they had ever tried horses. No, but they knew it was no use to try them. The logging company had ten yoke of oxen, or more properly calves, and were putting to the mill from 10,000 to 15,000 feet of logs a day, and thought that they were doing a wonderful business. The mill having a capacity of 25,000 to 30,000 feet daily, could not run to its full capacity on account of lack of logs. One day a middle aged man of large experience, who had lumbered in one of the Eastern States in his earlier years and then went to Michigan, where he was engaged in the lumber business for several years, appeared upon the scene. The timber, mostly poplar and white pine, was of good size, and the logging not very difficult. He asked the logger who was cutting the logs mostly twelve feet long why he didn't cut them mostly fourteen and sixteen feet, and use horses instead of cattle. "Kase it kaint be done," was the reply.

There are times when upon proper occasion some lumbermen can use strong and forcible language. This was such an occasion and the man a representative of that type. It would not be proper for me to repeat here what was said by this hustling logger of the Northwest, but he soon convinced the millmen if they would pay him a certain price a thousand feet he would keep their mill supplied with logs. An agreement was entered into, and soon the ten yoke of calves disappeared. In their place five heavy span of horses each weighing 1,300 to 1,400 pounds were put to work. These averaged 25,000 feet a day in skid-

timber. Those who are familiar with this kind of timber know that when it grows under favorable conditions it is one of our most majestic forest trees, often reaching the height of more than 100 feet, with a smooth, clear trunk four to seven feet in diameter, remarkably uniform in thickness, and fifty to seventy-five feet to the first limb. In most of the new districts few logs are cut above the first limb, so that the quality of the logs is of the best. The genuine soft yellow poplar has usually thin sap, the wood is brash, and the tree easily broken when it falls upon the ground, unless care is exercised in felling it. Millions of feet of our best poplar timber are thus wasted every year through the carelessness of choppers.

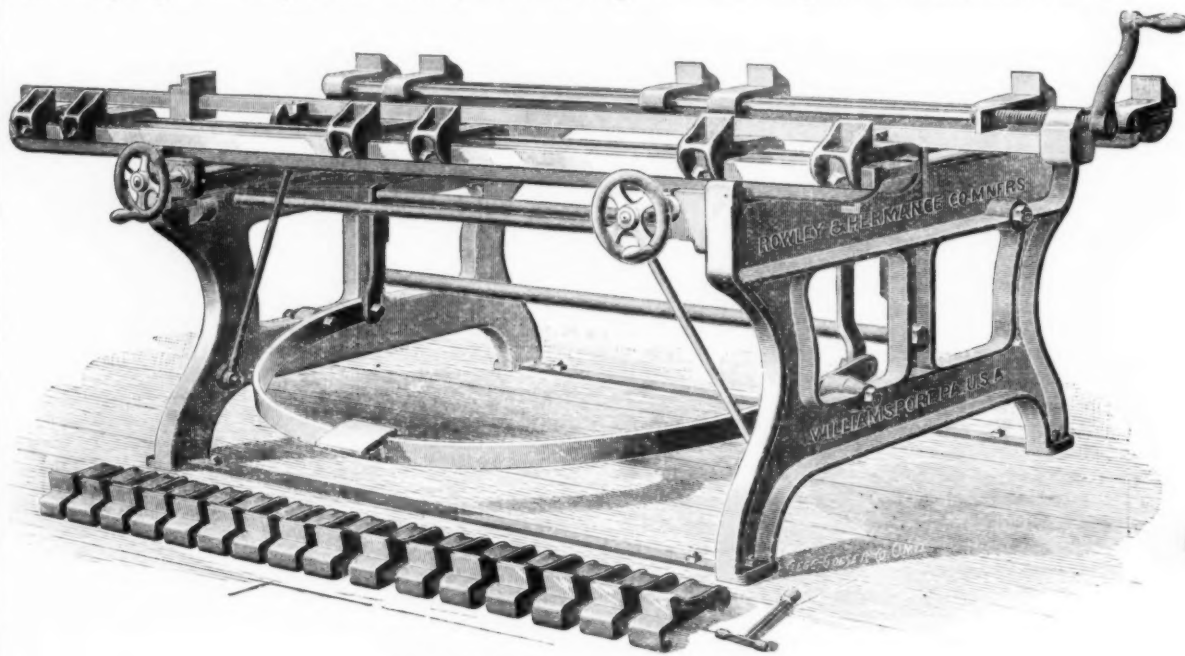
Another wasteful feature is that of allowing a portion of the tree to remain unutilized. For instance, the choppers will saw the tree off as near the butt as possible, then measure a 12-foot log and saw it off, and continue to saw as long as they can get 12-foot logs, apparently giving no attention as to whether any good portion of the tree remains after cutting off the last log, if that portion will not cut twelve feet in length. Say they cut four logs twelve feet long, or forty-eight feet of the length of the tree. There may be eight, nine or ten feet of good timber which can be utilized if properly managed. Suppose the choppers, instead of cutting all the four logs twelve long, had cut one sixteen feet, two fourteen feet and one twelve feet, they would have cut fifty-six feet of the tree, saved eight feet of its length, and this saving on trees four or five feet in diameter is an item worth considering.

It is necessary to state, however, that this carelessness and waste is seen only where the more primitive logging methods continue. Among our best operators no such work is allowed where they do their own logging. Millmen who buy their logs pay but little attention to the woodmen's methods, and hence are ignorant of this

The machine is accurately and substantially made. The legs are well braced to give steadiness, and the guides are well finished and exactly parallel. The plates to which the corner blocks are attached have a circular groove, and the corner blocks have a turned flange on the bottom to fit this groove; thus the corners swing a true circle. There are two lugs on the corner block, one at a greater distance from the centre than the other, to allow more pressure on stiles than on the rails. The machine can be set quickly for any size, and will clamp the sash perfectly square. It is furnished, when desired, with a clamp for sash or shutter work.

### Farwell's Window Frame Pocket Cutter.

This machine, constructed by the Adjustable Saw Table Co., of Fitchburg, Mass., and shown in the accompanying illustration, is the only one on the market for cutting square end pockets from the inside of jamb, and is designed as a companion for the pulley mortiser made by the same company. The pockets are all cut at one handling, and will cut from seventy to seventy-five frames per hour. The machine consists of a frame with hinged top adjusted by a hand wheel to govern the length of pocket. The arbor has collars for cutting different widths of pocket. Underneath the machine is a countershaft, on the boxes of which is housed a swing arm, and on the top of this is mounted two circular saws. Attached to the arm is a lever for swinging the saws. The under side of the arm is provided with counterbalance. Attached to the back end of the frame are brackets and boxes, on which is housed another swing arm. It is also provided with an intermediate countershaft. On the counter is a 20-inch friction driving pulley which transmits power to an arbor mounted on the arm. On the top end of this arbor is a 3-inch circular saw, back of which is a



SINGLE MOTION DOOR AND BLIND CLAMP.

ding, cutting the logs twelve, fourteen, sixteen and eighteen feet long, no matter what the size of the log. Not a horse was hurt, and when the job of 12,000,000 feet was completed the horses were almost in as good condition as when they first went on the job.

Here was a practical demonstration of what can be done by the right kind of men and methods in comparison with the antediluvian ways that have prevailed too long in some sections.

And while on this subject I want to call attention to another evil or wasteful method carried on by too many loggers of poplar

waste, or do not seem to care if they do know about it.

### Door and Blind Clamp.

The accompanying illustration shows a new pattern single motion door and blind clamp made by the Rowley & Hermance Co., of Williamsport, Pa. The manner of operating the machine is extremely simple and rapid, as can readily be seen in the illustration. Regarding its rapidity Foster & Jones, of Oshkosh, Wis., state that two boys clamped, wedged and pinned 360 doors in ten hours on this machine, the fastest work they know of.

mill to allow of using a small saw. The mill also provides a slot in back of jamb for screws or nails. This arm is also provided with counterbalance and lever for swinging the saw. Each machine is provided with a planer head, so the window jams can be planed to a surface after the pocket is again fastened into place.

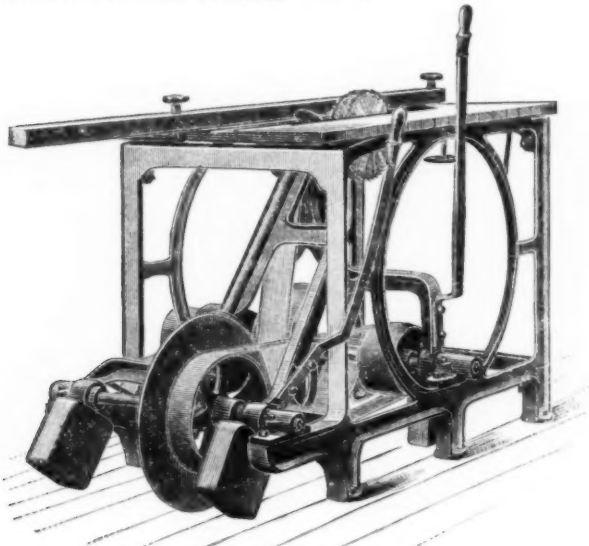
The machine is operated as follows: The top is adjusted to give the length of pocket desired, the jamb is laid level on the table and the top end of pocket cut by swinging up the small saw; the jamb is then moved the length of the pocket to a stop, and the bottom end cut in the same



manner. The circular saws are then swung up under the table, leaving the pocket cut out entire, and so perfect that it will fit into any jamb. The counter proper is provided with a tight and loose pulley eight inches in diameter and four and a-half inches face, driver to the circular saws 10x5 inches, and 12-inch pulley that runs back counter. The saw should make from 3,500 to 3,800 revolutions. Pockets can be cut up to two and a-half inches wide to twenty inches long. On narrow jambs pockets can be cut from edge. The machine is also fitted with two cut-off and split gauges

brought out of Elk river on the last rise. The firm have 3,000,000 feet yarded to run out on the next rise.

The spoke and wheel factory of the Queen City Manufacturing Co. at Meridian, Miss., was burned on the night of the 16th instant. Six box cars, belonging to the Alabama Great Southern Railroad, loaded with staves were also consumed. The loss is estimated at over \$50,000, with an insurance of \$28,000. This plant has recently been established and was enjoying a very prosperous trade. It will be rebuilt immediately.



FARWELL'S WINDOW FRAME POCKET CUTTER.

if desired, and can then be used as a saw bench. The weight of the complete machine is about 900 pounds.

#### Southern Lumber Notes.

THE exports of lumber and timber from the port of Jacksonville for the month of October, 1892, were 5,146,200 feet of pine, 363,450 feet of cypress, 11,000 cross-ties and 14,700 shingles. The steamer Algonquin carried out on the 18th inst. 200,000 feet of lumber, 3,000 cross-ties and four carloads of shingles.

WORK at the site of the new Bucki saw mill at Jacksonville is progressing rapidly, and Mairs & Lewis, the contractors, expect to have the new mill completed by the 1st of January, 1893. A dock is also being constructed, and a force of about eighty men are engaged.

THE Bridgeport Lumber Co., of Bridgeport, Ala., intend making a very handsome display at the Birmingham State Fair. It will consist of hand-carved mantels, doors and door-frames of quartered oak, and specimens of gum, poplar, quartered oak, veneers, etc., with photographs of their mills and buildings connected with their extensive plant.

THE Crosby Lumber Co.'s new mill at Lenoir, Tenn., is about completed, and it is said that they have 25,000,000 feet of logs under contract for the coming year.

THE plant of the Desha Lumber & Planing Co., at Arkansas City, Ark., was burned on Sunday the 20th inst. The mill property belonged to a Boston company, and was worth at least \$100,000. There were 5,000,000 feet of hardwood lumber in the yard, all of which was destroyed. It is estimated that the loss of the lumber and planing plant will foot up \$600,000.

A FIRE broke out on the 16th inst. in the lumber yard of Smith & Burr, of Howard, S. C., consuming about 35,000 feet of lumber. They had about 100,000 feet of lumber in their yards. Their loss is estimated at \$500.

THE extensive lumber firm of Edwards & Son, of Clendenin, W. Va., have just delivered 100,000 feet of lumber which they

THE Interstate Lumber Co., of Meridian, Miss., is now in full operation and is running its entire complement of planers and dressers. Their output this season is expected to be very large, and the company is receiving lumber from all points on the railways entering the city.

MESSRS. GRIMES & BLAKE, of Pollard, have leased the Taylor Mill at Escatawpa, Ala., and will start it up at once.

A LARGE tract of timber land on Elk river, in Pocahontas county, W. Va., was purchased from George W. McDonald last week by a syndicate of New York capitalists. The tract contains about 1,000 acres, and is rich in walnut, cherry, oak and poplar. Extensive developments will doubtless follow.

THE White River Stave Co.'s new mill at Madison, Ark., has commenced operations. The company has contracts for over 1,000,000 white oak staves on its books.

THE Black River Lumber Co., of Black Rock, Ark., is putting in a mill for cutting cypress shingles.

MESSRS. G. R. MINNICK & Co.'s new mill at Obion, Tenn., is completed, and will be at once started cutting poplar. The tract of poplar which they will work upon is said to be the last good body of that timber in Western Tennessee.

THE Old Dominion Lumber Co., of Drewryville, Va., cut over 1,000,000 feet of boards last month.

ALEXANDER ASHTON, of Douglasville, Ala., is building a saw mill with a capacity of squaring from fifty to seventy-five sticks of timber daily. He will ship his lumber to Pensacola, Fla.

THE Ouellette Lumber Co. has sold its milling property on Lake Centennial, near Vicksburg, Miss., to the firm of S. Spengler & Co. for \$14,000.

LAST week's freight of the steamer Yemassee, from Jacksonville, Fla., to New York, included 75,000 feet of lumber and 1,000 cross-ties.

THE lumber mill of Henry Hemmehoff, near Dayton, La., was burned on the 18th instant. The loss is estimated at \$15,000.

#### LUMBER MARKET REVIEWS.

##### New York.

OFFICE OF MANUFACTURERS' RECORD,  
No. 126 Liberty Street,  
NEW YORK, November 21.

There is nothing very startling in the lumber market since our last. What the yellow pine men have decided to do concerning a combination of prices has not yet been made apparent. We shall sincerely regret if, by any possibility, their efforts to secure a fair value for goods should miscarry. There is every reason why prices should be advanced and held up to where they should be by a trade united for the welfare of all.

Building orders, 12 in. and under... \$19 00/00 20 00  
" 14 in. and up... 20 00/00 21 00  
Yard orders, random... 17 00/00 18 00  
Ship stock, 40 ft. average... 22 00/00 23 00  
Heart face siding, 1 and 1 1/2 in... 18 00/00 19 00  
1-inch wide boards... 22 00/00  
1 1/2 and 2-inch wide boards... 23 00/00  
Kiln-dried sap... 18 00/00 19 00  
Kiln-dried flooring, rough cargo lot... 35 00/00 36 00  
" tongue and grooved, in carload lots... 40 00/00

It is interesting to note the advance which is being made in North Carolina pine, and which is apparent to every one who looks about him. A few years ago no one ever saw it in the temporary structures which are built from time to time in this city. If a man wanted a cheap boarding he bought white pine, and in this respect North Carolina pine cut a very small figure. But to-day all is changed. North Carolina pine is seen on every hand, and the cheap structures above noted are built now almost entirely of this wood. We attribute this to the fact that the North Carolina Pine Co. and those interested in this wood have made judicious efforts by advertising, etc., to further its advancement, and have thus brought it to the attention of a great many people and in a great many ways hitherto not thought of. Its friends seem to go on the principle that the more people think about it and talk about it the more it will be used, and we guess this is right.

The demand for cypress shows no particular improvement, yet there are evidences that this wood is coming in and will play an important part very soon. Its friends have in contemplation pushing it in a way that it will be brought to the attention of architects and others, and its merits will be fully demonstrated. In the use of cypress the New England States are far ahead of this market. They handle a good many cargoes of it in Boston and it gives great satisfaction.

There is a continued improvement in the poplar market and advanced prices are being maintained, much to the satisfaction of the wholesalers. Reports from the South indicate that the recent rains have taken down considerable quantities of logs, but not enough to cause any glut in the market, nor, in fact, to satisfy present requirements.

There is a growing demand for elm as a substitute for white oak, being considerably cheaper. While we do not in any way consider it as a competitor, yet for cheap work it makes a very good substitute.

There seems to be a quietness in quartered sycamore, and this rather surprises us, as we consider this a very handsome wood, and will be much disappointed if it goes out of fashion.

There is very little to say concerning quartered oak which has not been said before. No great demand is shown for it, yet there is not the slightest danger of its going out of fashion or of its being much lower in price. The ruling quotations today are as follows:

1x6 inch and up... \$19 00/00 20 00  
Thicker... 20 00/00 21 00  
Common... 35 00/00 36 00

There is no great demand for plain oak, although we have what might be called a steady market.

1x8 inch and up... \$35 00/00 36 00  
1 1/2 and 2 inch... 36 00/00 37 00  
2 inch... 37 00/00 38 00  
Export oak... 32 00/00 34 00

Dry ash is rather scarce, and such stocks

as are offering are sold without any great exertion on the part of the seller.

1 inch... \$35 00/00 37 00  
1 1/2 and 2 inch... 37 00/00 40 00  
2 1/2, 3 and 4 inch... 38 00/00 41 00  
Common... 42 00/00 44 00  
Balusters... 22 00/00 26 00

##### Baltimore.

OFFICE MANUFACTURERS' RECORD,  
BALTIMORE, November 23.

The movement during the past week in the lumber and timber market has been fair, and the general features of trade are similar to those of the corresponding period last year. The leading commission firms report trade as moderate in volume, and among retailers there has been considerable activity in most of the yards. A fair movement is present among builders, and from the present outlook there will be a very active demand in the early spring for building purposes. The receipts of Virginia and North Carolina kiln-dried pine are fully equal to the demand, and prices are firmly maintained throughout the general list. Air-dried lumber is in moderate request, and the better grades are generally salable at quoted figures. Common and inferior stuff is difficult to move at list figures. In cypress the choice grades are firm, while medium and inferior grades are dull. There is a fair movement in white pine, and several large sales are reported, while prices are generally steady. There is very little demand for hardwoods; furniture men are not buying largely, and from other sources the inquiry is light. The shingle market is quiet, with the demand not so pronounced as last week, while values are quite firm and stocks not heavy. Laths are dull and nominally steady. Planing mills report a fair business during the past week and all are fully engaged executing orders. Box factories are generally reported busy and the product commands rather better figures.

The following table represents the prices current at this date:

VIRGINIA AND NORTH CAROLINA PINE.	
5-4x10 and 12 No. 2, kiln dried...	\$17 00/00 17 25
4-4x10 and 12 No. 1...	19 75/00 20 25
4-4 narrow edge, No. 1, kiln dried...	17 25/00 17 75
4-4 wide edge...	22 50/00
6-8x8, 10 and 12...	22 25/00 23 50
4-4 No. 1 edge flooring, air dried...	15 50/00 16 50
4-4 No. 2 edge flooring...	12 50/00 13 50
4-4 No. 1 12-inch stock...	17 00/00 17 50
4-4 No. 2...	13 50/00 14 50
4-4 edge box or rough white...	8 50/00 9 50
4-4 " " (ordin'ly widths)	8 50/00 9 00
4-4 " " (narrow)	8 50/00 9 50
2-4x12...	10 50/00 11 00
3-4 narrow edge...	7 00/00 7 50
3-4 all widths...	7 50/00 8 00
3-4 10x16 wide...	8 00/00 9 00
Small joists, 2 1/2-12, 14 and 16 long...	8 00/00 9 00
Large joists, 3-16 long and up...	9 50/00 10 50
Scantling, 2x3-16...	9 50/00 10 50
" 2x4-16, 18 and 20...	9 50/00 10 50
" 3x4-16, 18 and 20...	9 50/00 10 50
" 6-4x12-16...	10 50/00 11 00
" 8-4x12-16...	10 50/00 11 00
" 6-4x10-16...	9 00/00 9 50
" 8-4x10-16...	9 00/00 9 50

SOUTHERN PINE.	
Siding and edge boards...	14 50/00 15 00
Heart face boards...	22 50/00 23 50

WHITE PINE.	
1st and 2d clear, 4-4...	45 00/00 52 00
" 5-4, 6-4 and 8-4...	45 50/00 52 50
3d clear, 4-4, 5-4, 6-4 and 8-4...	43 00/00 44 00
Good edge culls...	11 00/00 15 00
White pine, No. 1, 4-foot headed pickets...	13 50/00 14 50
4-4 selected edge...	39 00/00 43 50
6x8-4 selected edge, box out...	39 00/00 45 00

CYPRESS.	
4-4x6, 16 feet, clear...	23 50/00 24 50
4-4x6, 16 feet, fencing...	12 50/00 13 50
4-4 rough edge...	10 00/00 10 50
4-4 edge, Nos. 1 and 2...	19 50/00 21 00

HARDWOODS.	
Walnut.	
3/4, Nos. 1 and 2...	75 00/00 100 00
4-4, Nos. 1 and 2...	90 00/00 100 00
5-4, 6-4 and 8-4...	95 00/00 110 00
Nos. 2 1/2, 3 and 4...	125 00/00
Newell stuff, clear of heart...	125 00/00
Culls...	30 00/00 35 00

Oak.	
Cabinet, white and red, plain sawed and good 1 and 2, 8 in. and up, 12 to 16 feet long, 4-4...	35 00/00 40 00
5-4 to 8-4...	35 00/00 40 00
Quartered white, 1 and 2 quality, all figured, 6 in. and up wide, 4-4...	50 00/00 53 00
Culls...	10 00/00 15 00

Poplar.	
Nos. 1 and 2, 3/4...	22 00/00 23 50
" 4-4...	24 00/00 25 50
Nos. 5, 6 and 8-4...	27 00/00 30 00
In yellow pine cargoes, log run stock...	12 50/00 16 50
Culls...	12 50/00 14 50

SHINGLES.	
Cypress, No. 1 hearts, sawed, 6x20...	7 50/00 7 75
No. 1 saps, sawed, 6x20...	6 00/00 6 25
No. 1 hearts, shaved, 6x20...	6 50/00 7 00
No. 1 saps, shaved, 6x20...	5 25/00 5 50

LATHS.	
White pine...	2 70/00 2 75
Spruce...	2 30/00 2 40
Cypress...	2 15/00 2 20

## Norfolk.

[From our own Correspondent.]

NORFOLK, VA., November 22.

The past week has been characterized by a special activity in the lumber market, and in every department of this industry the prospect is most flattering. With favorable weather the volume of transactions for the current month will be very large, exceeding, perhaps, that of any other previous month, and both manufacturers and buyers report an active and constant demand. The building boom has caused quite a demand for lumber and woods for finishing interiors, and it is expected that with the opening of spring of 1893 there will be an immense trade in lumber at this port. There is a first-class inquiry for North Carolina kiln-dried yellow pine, and transactions during the week in this particular line have been very heavy. Prices are well maintained, and at the present figures ruling orders are numerous, and all city mills as well as those throughout the pine region are fully engaged. In air-dried lumber there is a fair volume of business, and the market shows up somewhat better. The demand is better, and in both a local and shipping way there is considerable moving at steady figures. The inquiry is mostly for flooring grades, which are in good supply, while box lumber in edge widths is very dull and hard to move. Values range as follows: \$13.00 to \$13.50 for No. 1, \$10.00 to \$10.50 for No. 2 and \$9.00 to \$9.50 for box. Cypress lumber and shingles are in good demand, while stocks are only moderate, especially in the better grades. The following table represents the prices current at this date:

Kiln-dried North Carolina pine lumber f. o. b. at this port is quoted as follows:

5-4 rift No. 1.....	\$27 50/60	—
5-4 rift No. 2.....	16 00/60	—
5-4X10 No. 1.....	20 00/60	—
5-4X12 No. 1.....	20 00/60	—
5-4X10 No. 2.....	15 00/60	—
5-4X12 No. 2.....	16 00/60	—
5-4 edge No. 1.....	17 50/60	—
5-4 edge No. 2.....	13 50/60	—
4-4 rift No. 1.....	25 00/60	—
4-4 rift No. 2.....	15 00/60	—
4-4X10 No. 1.....	18 50/60	—
4-4X12 No. 1.....	19 50/60	—
4-4X10 No. 2.....	15 00/60	—
4-4X12 No. 2.....	15 00/60	—
4-4 edge No. 3.....	9 50/60	—
5-4 edge No. 3.....	10 50/60	—
4-4S, 10 and 12 culls or box.....	9 00/60	10 50
4-4S-4 edge, cull or box.....	8 50/60	—
VIRGINIA PINE.		
4-4 flooring boards (dry and clear).....	13 50/60	14 50
4-4 flooring boards (rough).....	7 50/60	8 50
SHINGLES.		
No. 1 hearts, split, car lots.....	6 50/60	7 75
No. 2 hearts, split, car lots.....	5 50/60	6 25
No. 1 saps, split, car lots.....	4 75/60	5 50
No. 2 saps, split, car lots.....	4 50/60	5 00
No. 1 sawed hearts, car lots.....	6 50/60	7 25
No. 2 sawed hearts, car lots.....	5 00/60	5 50
WOOD.		
Hard, per cord.....	2 75/60	3 00
Pine, per cord.....	2 75/60	3 00
STAVES.		
Red oak hoghead, prime.....	38 00/60	—
Red oak hoghead, culls.....	22 00/60	—
White oak hoghead, prime.....	50 00/60	—
White oak hoghead, culls.....	28 00/60	30 00
White oak heading, prime.....	50 00/60	—
White oak heading, culls.....	26 00/60	—

## Charleston.

[From our own Correspondent.]

CHARLESTON, S. C., November 23.

The conditions which surround the lumber market at this point are all very favorable at present, and the indications are that the winter season's trade will be considerable in volume. There is a good demand from Northern points, and throughout the list of values there is a little more firmness. The foreign inquiry is light, and advices from Europe are not of such a tone as to induce shipments at present. Advices from the interior of the State represent all the mills as fully engaged on orders, and some are considerably behind in their work. There is plenty of logs, and most of the mills here and at George town have sufficient to keep them busy for the next thirty days. Prices are as follows: Merchantable lumber \$14.00 to \$16.00 for city sawed, and \$12.00 to \$14.00 for railroad. Square and round timber is quoted \$9.00 to \$13.00 for railroad, and \$8.00 to \$11.00 for raft. Dock timber \$4.50 to \$6.50, and shipping \$5.50 to \$10.50. Shingles \$5.00 to \$7.00 per thousand. The shipments of lumber during the week were

as follows: Schooner Georgetta Lawrence, for New York, with 280,480 feet of yellow pine, and the brig Eugene Hale, for Boston, with 259,260 feet. Coastwise freights on yellow pine lumber are steady, with a moderate demand for handy-sized vessels. Rates are as follows: To New York \$5.00, to Philadelphia \$4.75, and some business has been done with Providence on private terms. Crossies, thirty-six feet, are quoted thirteen cents each.

EXPORTS OF LUMBER FROM CHARLESTON FROM SEPTEMBER 1, 1891, TO NOVEMBER 18, 1892.

Exported to	1891-'92. Feet.	1891-'92. Feet.
New York.....	6,435,186	7,481,192
Boston.....	259,260	—
Philadelphia.....	1,027,000	1,675,000
Baltimore.....	440,000	534,000
Other United States ports.....	307,000	995,000
Total coastwise.....	8,468,446	10,685,192
Great Britain.....	—	—
Palermo.....	—	—
France.....	440,739	—
West Indies.....	—	—
South America.....	—	468,390
Nova Scotia.....	—	—
Other foreign ports.....	—	185,474
Total foreign.....	440,739	653,794
Grand total.....	8,909,175	11,341,966

## Savannah.

[From our own Correspondent.]

SAVANNAH, GA., November 20.

The market for lumber has been quiet during the past week, and while the volume of trade is not as large as usual, there is a very buoyant tone throughout all branches of the lumber and timber trade. From the interior of the State reports continue very favorable, and throughout the milling section there is a fair business in progress. During the past week the demand has been mostly of a domestic character, and Baltimore, New York and Philadelphia have taken the bulk of the shipments. The exports for the week were 1,860,605 feet of lumber, 410,000 shingles, 513 cedar logs and 3,000 staves. Since the 1st of September the total shipments have been 27,185,324 feet of lumber, 2,077,000 shingles, 358,200 crossies, 1,354 cases cedar, 1,933 cedar logs, 72,200 staves and 1,230 bundles of laths. Among the heavy shipments by the Georgia Lumber Co. were 500,000 feet of lumber per schooner Josephine and 320,000 feet per schooner Mary J. Cook, both for Baltimore. In the list of values there is a steady tone prevalent, and for choice grades of lumber values are a shade firmer. Easy sizes are quoted at \$11.50 to \$13.00, ordinary \$12.00 to \$16.50, difficult \$14.00 to \$25.00, flooring boards \$14.50 to \$22.00, and shipstuff \$15.50 to \$25.00. Lumber freights are dull and nominal, with a liberal offering of handy-sized vessels. The rates from this and nearby ports of Georgia are quoted nominally at \$4.25 to \$5.00 for a range including Baltimore and Portland, Me. To the West Indies rates are nominal; to Rosario, \$16.00 to \$17.00; Buenos Ayres or Montevideo, \$14.00; Rio Janeiro, \$15.00, and Spanish and Mediterranean ports, \$12.00. Rates to the United Kingdom for orders are nominal for lumber at £4 10s. per standard. Steamer rates are quoted at \$7.00 to New York, \$8.00 to Philadelphia and Boston, and \$6.50 to Baltimore.

## Brunswick.

[From our own Correspondent.]

BRUNSWICK, GA., November 21.

A very active movement is present here in the lumber market, and the shipments for the current month are heavy. There is considerable activity at all milling points adjacent to the city, and, indeed, throughout the State the industry is in a most flourishing state. Our shipments embrace cargoes to all Northern ports, and the demand is much more active from the West Indies and South America. The foreign demand is much better, and some large deals are at present in suspense awaiting action on advices from Europe. The Brit-

ish steamship Coventry was cleared at the custom-house this week by the Brunswick Terminal Co. for Dunkirk and London, and among the cargo was 40,000 feet of boards and 1,300 tons phosphate, besides 2,408 bales of cotton, and the total value of shipment was \$124,122. The bark Daphne cleared for Waterford, Ireland, with lumber, and the bark George Peak will sail with timber for the United Kingdom. The following vessels are loading for Northern ports: Schooners Senator Sullivan and Florence Frederick for New York and Jonathan May for Philadelphia. The bark Parthenia, loaded with lumber, sailed this week for Cardiff.

## Mobile.

[From our own Correspondent.]

MOBILE, ALA., November 21.

The lumber market at this port cannot be called dull, judging from the number of vessels now loading, and while the hewn timber trade is somewhat depressed, there is a large volume of business in lumber. The shipments of timber, in spite of low prices on the other side, are being made readily, as it is cheaper to make a loss on cargo than pay demurrage on vessel. Trade with South America is increasing, and there is a good demand from that section. Mexico and the West Indies are good buyers, and the Seaboard Manufacturing Co. has been making large shipments of cypress lumber to the North and East. In the list of values hewn timber, which is in good demand, is in light supply and is quoted at 14 cents, with sales at 14½ and even 15 cents for superior quality. Sawn timber, good quality 40-foot average, is quoted 13½ to 14 cents. The shipments of sawn timber for the week were 24,906 cubic feet, and since September 1 293,109 cubic feet. Exports of hewn timber were 27,846 cubic feet, and since September 1 455,647 cubic feet. The exports of lumber for the week were mostly to coastwise ports, with the exception of one cargo to Cuba and 26,462 feet for Liverpool. Total shipments of lumber for the week were 1,891,237 feet, and since September 1 12,038,963 feet, against 8,975,499 feet for the corresponding period last year. The total shipments of lumber and timber from this port for the months of September and October were 18,499,774 superficial feet. Lumber freights are unchanged. To the West Indies the rates are \$6.00 to \$7.00 per thousand, coastwise \$6.00 to \$7.00 per thousand and to Rio Janeiro \$18.00 nominal. Timber to the United Kingdom is quoted at 28s. to 30s. for hewn per load, sawn timber £4 10s. to £4 15s. per standard. Deals per standard are quoted at £4 10s. to £4 15s.

## Pensacola.

[From our own Correspondent.]

PENSACOLA, FLA., November 23.

The movement in lumber and timber during the past week has been of fair proportions, and the market may be called active. The demand is principally for lumber, and comes from both foreign and domestic ports. Both hewn and sawn timber are dull, in sympathy with the depression on the other side, and prices are not showing any strength; however, under these conditions, shippers are busy and want to do business. Mills are all busy, and throughout this section of the State there is a large business doing in cutting railroad timber. The shingle industry is growing, and prices for all grades are very firm. Among the shipments for the week were 506,000 feet sawn timber and 16,000 feet of lumber for Cardiff. For Havre, France, a shipment was made of 658,000 feet of sawn timber and 85,000 feet of lumber. The Southern States Land & Lumber Co. shipped over 1,000,000 feet of lumber to Philadelphia and 500,000 feet of lumber to New York. Lumber freights remain unchanged at quotations given a week ago.

## Memphis.

[From our own Correspondent.]

MEMPHIS, TENN., November 21.

The local country trade has improved to a large extent during the past few days. The shipping business is as good as one could ask, and steadily improving. The sales are larger and of better quality, and payments are made more promptly than usual. The agricultural implement makers are putting in some good contracts for dimension stuff. They are learning that the timber of the South is closer grained and better adapted for their purposes than the best of the Michigan and extreme Northern woods.

There is a large amount of dullness in the English export trade; this is a business that is so easily overdone. The general reports show that as a rule the supply of American lumber and timber was greatly increased during the month of October, that month closing with 25 to 35 per cent. more of American stock on hand than did September. This is especially the case with the common and ordinary grades both of lumber and of logs; especially is the market overstocked with oak staves. This may not be the English report, but it is the way that market looks to the Memphis foreign shippers.

Among the last week's visitors to the office were Frank P. Woolen, in charge of the Chicago end of the big hardwood lumber firm of Chicago and the Mississippi Delta, L. V. Boyle & Co. He was here on an inspection of their lands and plants in the Delta. He seemed to be very sanguine as to the outlook for hardwoods for the fall and winter. Their product all goes to their yards in Chicago or shipped on orders from there. He felt assured that there was much of encouragement in the political and financial situation throughout the South, even though the crop promise was far from flattering.

S. M. Clement, of Clement & Ashley, saw mill men, of Hernando, Miss., also called. Their mill cuts about 10,000 feet a day of poplar, which is mostly shipped here or handled from here. He said they were fully satisfied with the results of their summer's work, prices, etc. They had pretty well exhausted the poplar on such of their own land as was available to the mill and railroad, and were securing contracts to cut the timber on a tract of other lands near them. This will about finish what there is left of the poplar in that portion of the Delta. The associate branches of the lumber business are doing a thoroughly satisfactory business, working full or overtime and getting good prices therefor.

The belting and mill machinery supply men all report a good business and collections prompt.

There are no changes as yet in prices, although the heavy hardwood men say that they will be compelled very soon to make a material advance.

BLACK WALNUT.		
1st and 2d, 1, 1½ and 2-inch.....	\$65 00/60	70 00
Common.....	35 50/60	40 00
Counter tops.....	90 00/60	110 00
ASH.		
1st and 2d clear, 1 to 4-inch.....	24 00/60	30 00
Common.....	12 00/60	14 00
CYPRESS.		
1-inch, 1st and 2d clear.....	22 00/60	24 00
1½, 1½ and 2-inch.....	24 00/60	26 00
Fencing 1x6, 16 feet.....	15 00/60	16 00
POPLAR.		
1-inch, 1st and 2d clear.....	24 00/60	25 00
1½ and 2 inch, 1st and 2d clear.....	26 00/60	28 00
Common boards.....	14 00/60	16 00
Dressed, 1, 1½ & 2-in., 1st & 2d clear.....	28 00/60	30 00
Common dressed, 1-inch.....	16 00/60	17 50
Squares.....	22 50/60	26 00
COTONWOOD.		
1 to 3-inch mill run, culls out.....	9 00/60	12 00
Squares.....	12 50/60	16 00
RED GUM.		
1st and 2d.....	16 00/60	20 00
Common and culls.....	8 00/60	10 00
OAK.		
1 to 4-inch, 1st and 2d.....	24 00/60	26 00
Common, 1 and 2-inch.....	13 00/60	15 00
Quarter oak, 1-inch, 1st and 2d.....	30 00/60	32 00
Quarter oak, 1½-inch and up.....	34 00/60	36 00
White \$1 higher.		
YELLOW PINE.		
1st and 2d, 1½ and 2-inch.....	18 00/60	20 00
Dressed.....	25 00/60	30 00
Flooring, 5 and 6 d and m.....	17 50/60	—
Flooring, 3 and 4 d and m.....	17 50/60	20 00
2d flooring.....	15 00/60	17 50
Heart step lumber.....	27 50/60	—
Ceiling, 1st and 2d, ¾, ¾ and ¾.....	17 50/60	20 00
Ceiling, 1st and 2d, ¾ and ¾.....	16 00/60	—



Common f. o. b. Memphis.	
Car lots.....	12 50
TIMBER (LOGS).	
Poplar.....	6 00
Cypress.....	6 00
Cottonwood.....	3 00
Gum.....	3 00
Oak.....	6 00
Ash.....	8 00
Black walnut.....	15 00
SHINGLES.	
No. 1 heart cypress, 16-inch.....	3 00
No. 1 sap, 16-inch.....	2 25
LATH.	
Poplar.....	2 00
Cypress.....	2 50
Pine.....	2 00

**Beaumont.**

BEAUMONT, TEXAS, November 19.

Now that the political excitement has cleared away, lumbermen are settling down to business, and everything is moving along in the old way. The lumber market may be written fairly active during the past week, and the demand is well maintained, coming mostly from points beyond the State. A better feature in trade is the liberal supply of cars, which tends greatly to facilitate shipments, which are being promptly made and stocks reduced. A prominent shipper of lumber, Col. C. Bender, says: "The lumber business is better than it has been for a long time. All the mills along the line of the East & West Texas road are making heavy shipments, with good facilities for handling lumber." Opinions of such men are valuable, and show the true tendency of the lumber industry. The Beaumont *Journal*, in its review of the market, says: "General trade has been fairly active during the week with markets outside of the State, but Texas dealers have made only small purchases. Still there is no cause for complaint, the general volume coming up fully to expectations. The car supply is ample at this time, and shipments of both yard stock and bill stuff are being promptly made. Prices are well maintained. The demand for shingles continues good." At Orange, Texas, and Westlake and Lake Charles, La., the movement is improving and all the mills are fully engaged in getting out their orders with dispatch. There is a good general demand for railroad timber, and orders are coming in freely. The annual meeting of stockholders and directors of the Reliance Lumber Co. will take place at the company's office in this city on next Thursday. All the features of the market, both at this point and through out the Southwest, are very encouraging, and a very strong movement will prevail during the winter and early spring. The building up of towns and cities throughout the State is creating a better demand for lumber, and reports from all agricultural sections are more cheerful.

**IRON MARKETS.****Philadelphia.**

[From our own Correspondent.]

PHILADELPHIA, November 22.

There continues to be a good demand for pig iron at the quotations of a week ago, although the placing of orders during the past month by many of the largest consumers for material sufficient to cover their requirements until after the beginning of the new year has somewhat lessened the number of inquiries for crude metal. Since these purchases have also taken many of the producers out of the market for the present, the competition for business is, therefore, not so active, and the slackened demand has had no appreciable effect on the market. Furnacemen and their agents are somewhat disturbed over the possibilities of a further increase in the output by the blowing in of more of the idle furnaces, with the influences which this course will have upon the future condition of the market. January and February are usually months of restricted demand in the iron trade, and, while the accumulated stocks are gradually disappearing in the face of an active consumption, which has also absorbed current production, both buyers and sellers appear to be satisfied to await the

outcome of the next few weeks before closing much new business. At the present time the market is without any evidences of weakness, and it is only the possibilities of the future that causes a cautiousness in regard to orders for the new year. Both producers and consumers are in a position to wait until the market clears itself. Sales of the best brands of foundry and mill irons have been made at full-quoted rates, and even where the quality is not of the first, prices are firmly maintained. For tide-water delivery, or its equivalent, the following are the current quotations for the best grades of iron. On orders for Southern iron at points 100 miles west and south of here the usual concessions continue in force:

Standard Pa. No. 1 X.....	\$15 00	15 75
" No. 2 X.....	14 00	14 75
" Forge.....	13 00	13 50
Southern coke No. 1 foundry.....	14 75	15 00
" No. 2.....	13 75	14 25
" gray forge.....	13 00	13 50

**Pittsburg.**

[From our own Correspondent.]

PITTSBURG, November 22.

The situation in this market remains fairly good, and there are no complaints on the outlook for the winter and spring months. The demand has not fallen off, as was generally anticipated, although there is no particular rush about the buying. In all respects the market is the same as it has been during the closing weeks of the summer and the early fall. What was bought was either for immediate use or for delivery up to the beginning of the new year. There may be a shut off of the transactions during December, but the indications now are that there will be little or no change, as all lines have been placed on such a basis that there will not be much room to advance, and certainly none at all to drop lower.

Bessemer is perhaps a trifle stronger than it was and may become more so, but that hope does not extend any farther. The other lines of pig are positively chained down to the level they occupy, but there is some compensation for this in the fact that the demand is good and remains steady. In fact, all grades are having a fair market, with the advantage on the side of Bessemer, gray forge and of course the staple foundry and mill irons. The quotations are unchanged:

Gray forge.....	\$12 50	12 60
Mill iron.....	12 50	13 00
Foundry No. 1.....	14 00	14 25
" No. 2.....	13 00	13 25
Bessemer.....	13 75	—

Sales this week included 15,000 tons gray forge at \$12.50, 12,000 tons Bessemer divided at \$13.75 and \$13.85 in different sized lots, and some Southern charcoal.

**Wheeling.**

[From our own Correspondent.]

WHEELING, W. VA., November 22.

The metal market continues undisturbed by any influence and presents very favorable characteristics. Demand for all qualities of pig iron is firm and active, and any prestige that has been gained in the past few weeks is held with assurance. The finishing mills are still working up to capacity and taking as much iron as they have at any time in the past two years. There is no indication of an abatement of this demand for a long time yet, for most concerns are sold well into next year. Although mill irons show the greatest strength, Bessemer is in better demand than it has been for some time, and gives promise of continued activity. The steel mills will not be able to do more than fill orders already taken before the middle of January or later, and prospects are that by that time they will be sold as far ahead as they now are. Taken as a whole, surrounding conditions in all lines are first-class and there is no room for complaint. Furnaces that were reported last week as having demanded better rates for deliveries after the first of the year still stick to this demand with firmness, and probabilities are

that unless some unlooked-for circumstance arises to check the present good feeling the first three months of 1893 will be reckoned among the best that the iron business has seen in quite a long while. Several fairly good-sized sales of Southern iron, both foundry and mill, are reported for the last half of last week. The prices secured for these consignments are a little better than those quoted two or three weeks ago. The falling off in the speculative buying which was noted last week has had a good effect on legitimate dealing, and the removal of the speculators from the market has increased the confidence of both furnacemen and finishers. There is a general belief that the present production of pig iron will not be increased in the near future unless there is a phenomenal increase in the demand. This is another good result of the discontinuance of speculation, for it is a fact that two or three weeks ago several idle furnaces contemplated resuming in response to the fictitious demand then existing. Prices are quoted as follows in the Wheeling market:

No. 1 mill iron.....	\$12 50	12 75
Same for future delivery.....	12 50	12 85
No. 1 Southern mill iron.....	12 35	12 50
No. 1 foundry.....	14 75	15 00
No. 2.....	13 75	14 00
No. 3.....	13 00	13 25
Bessemer.....	13 75	14 00

**Chicago.**

CHICAGO, November 19.

The presidential election has ceased to be the sensation of the hour, and business is again going on without interruption. During the last week the total aggregate of sales has been large for this period of the year. Moderate transactions have taken place in Northern and Southern charcoals, but for the most part buying has been confined to cokes. Southern furnaces have received a good demand and a number of fair-sized contracts have been closed by them, these on a basis of \$10.00 Birmingham for No. 2 foundry, other grades in proportion. The demand in this market is at present divided about equally between foundry and soft metal. Reports from various sections show that the furnace companies generally are well sold ahead, and in some cases to such an extent that no further contracts of size can be handled for the next five or six months. The general conditions all remain healthy, and while the architectural iron-makers and jobbing foundries report a falling off in work, consumption in other lines is heavy and in excess of same time a year ago.

We quote for cash f. o. b. Chicago:

Southern coke No. 2 foundry.....	\$13 50	14 00
" No. 2 soft.....	13 25	13 75

ROGERS, BROWN &amp; MERWIN.

**Cincinnati.**

CINCINNATI, November 19.

Politics have mingled with business to a considerable extent during week under review. On the one hand, we have learned of new enterprises that would be abandoned on account of the verdict of the country on the tariff. Reports have been printed also of cancelled contracts and diminished work. On the other hand, expressions of satisfaction are freely heard. One enthusiastic manufacturer writes us doubling his order, and recording his belief that we have now entered upon a period of great prosperity in which the smaller manufacturer will share, though the great trusts may suffer. Opinions aside, however, the fact remains that the election has had no appreciable effect upon current business. Actual demands for iron are taking stocks from furnaces as fast as made, and the tendency is towards steady hardening of prices. Naturally, the evidence of changed temper of the country on the subject of protection has a tendency to check all blowing in of furnaces now idle. So far as the South is concerned, the stacks that have gone out for repairs outnumber those that have gone in, the net result being the decrease of production. The is no prospect of any large

increase of output in the North until the whole situation is defined and values have further advanced.

The run of moderate-sized orders during the week has been exceptionally good. The aggregate is up to the limit of an active market. Cincinnati is to-day distributing more pig iron than ever before in its history. Southern coke irons continue the principal feature in transactions. These are supplemented, however, by numerous sales of Ohio strong irons, Ohio softeners, car-wheel irons and specialties. Some sizeable trades were closed in Lake Superior charcoal iron at full prices.

Summing up generally, the position seems to be that buyers intend to move cautiously until they are satisfied that no radical changes are confronting us, and when this conclusion is reached the business of the country will go on broadening under the influence of natural forces that are more powerful than political changes.

We quote for cash f. o. b. cars Cincinnati:

Southern coke No. 1 foundry.....	\$13 75	14 00
" No. 2 foundry and.....	12 50	12 75
No. 1 soft.....	12 50	12 75
Hanging Rock coke No. 1.....	15 50	16 00
" charcoal No. 1.....	18 50	19 50
Tennessee charcoal No. 1.....	16 00	16 50
Jackson county stone coal No. 1.....	16 00	16 50
Southern coke, gray forge.....	11 50	11 75
" mottled.....	11 00	11 25
Standard Alabama car wheel.....	18 00	19 00
Tennessee car wheel.....	17 00	17 50
Lake Superior car wheel.....	17 50	18 00

ROGERS, BROWN &amp; CO.

**St. Louis.**

ST. LOUIS, November 19.

This market has been rather quiet during the past week, as almost everyone seems to have bought for deliveries up to January 1st. Buyers are slow to make purchases for deliveries commencing first of next year, as they want to see what effect the recent election will have on the market.

We do not hear of any weakness on the part of furnaces in regard to price. They all report being sold ahead and prices are strictly maintained.

We quote for cash f. o. b. cars St. Louis:

Southern coke No. 1.....	\$14 50	14 75
" No. 2.....	13 25	13 50
" No. 3.....	12 75	13 00
" gray forge.....	12 25	12 50
" charcoal No. 1.....	16 00	16 50
Missouri No. 1.....	14 50	15 00
Ohio softeners.....	16 50	17 00
Lake Superior car wheel.....	18 00	18 25
Southern.....	18 50	18 75
Frick's Connellsville foundry coke.....	—	5 65

ROGERS, BROWN &amp; MEACHAM.

**Louisville.**

LOUISVILLE, November 19.

Pig iron has been less active during the week under review than for some weeks previous. There appears to be some hesitancy on the part of buyers about placing large contracts so soon after the election, and some are even inclined to believe that prices will be but little, if any, higher in the near future, and possibly may be lower. We think as a general thing the trade is not apprehensive of the tariff question, and realize that there are good reasons for a strong iron market. It is natural there should be some lethargy in the market just at this time, but prices remain firm.

HOT BLAST FOUNDRY IRONS.			
Southern coke	No. 1.....	\$13 50@	13 75
"	" No. 2.....	12 50@	12 75
"	" No. 3.....	12 00@	12 25
" charcoal	No. 1.....	16 00@	17 00
"	" No. 2.....	15 50@	16 00
FORGE IRONS.			

FORGE IRONS.		
Neutral coke.....	11 50 <sup>00</sup>	12 00
Mottled.....	11 00 <sup>00</sup>	11 25
CAR-WHEEL AND MALLEABLE IRONS.		
Southern (standard brands).....	20 00 <sup>00</sup>	21 00
" (other brands) .....	18 50 <sup>00</sup>	19 50
Lake Superior.....	19 50 <sup>00</sup>	20 50

HALL BROS. &amp; CO.

THE British steamship Thordisa was cleared on the 16th instant from Pensacola, Fla., by Messrs. Ross, Howe & Merrow for Liverpool. Her cargo consisted of 7,610 bales of cotton, weighing 3,805,898 pounds and valued at \$323,425. This is one of the largest cargoes that has ever left a United States port. The same steamer carried last season from New Orleans 6,322 bales of cotton, weighing 3,052,505 pounds, which shows a gain in her Pensacola cargo as compared with New Orleans of nearly 25 per cent.

# CONSTRUCTION DEPARTMENT.

**WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.**

\* Means machinery is wanted, particulars of which will be found in "Machinery Wanted" columns.

# In correspondence relating to matters reported in this paper, it will be a favor if it is stated that the information was gained from the MANUFACTURERS' RECORD.

## ALABAMA.

Birmingham—Sash and Blind Factory.—W. P. Brewer is enlarging his sash and blind factory.

Birmingham—Motor Works.—C. A. Loring is endeavoring to organize a stock company for the manufacture of spring motors.

Birmingham—Cotton Compress.—Messrs. Bradford & Co. will build a \$12,000 cotton compress building. J. W. McClain has prepared plans for it.

Bridgeport—Woodenware Factory.—The Sefton Manufacturing Co., of Chicago and Anderson, Ind., may establish a butter-dish, etc., factory in Bridgeport.

Bridgeport—Car Works.—The Bridgeport Land Co. is negotiating with the Southern Iron Car Co. for the location of car works in Bridgeport.

Douglasville—Saw Mill.—Alexander Ashton is erecting a saw mill.

Huntsville—Creamery.—Endeavors are being made for the erection of a creamery. George J. Motz can give information.

Mobile—Wharf, etc.—The Mobile Transportation Co. will build a wharf and bulkhead 670 feet long and 40 feet wide.

Tusculum—Water Works.—The city council has lately granted a franchise to the Electric Light & Water Works Co., and the water works plant will be built at once.

## ARKANSAS.

Black Rock—Shingle Mill.—The Black River Lumber Co. is putting in a shingle mill.

## FLORIDA.

Citra—Packing-house.—A packing-house will be built by the Consolidated Orange Co.

Hague—Saw, Shingle and Planing Mill.—E. J. Pearce is putting in a saw, planing and shingle mill.

Leesburg—Packing-house.—The Consolidated Orange Co. will erect a packing-house.

Oviedo—Packing-house.—The Consolidated Orange Co. is to build a packing-house.

Orlando—Packing-house.—The Consolidated Orange Co. will build a packing-house.

Plant City—Packing-house.—The Consolidated Orange Co. will build a packing-house.

San Mateo—Packing-house.—A packing-house will be built by the Consolidated Orange Co.

Titusville—Packing-house.—A packing-house will be built by the Consolidated Orange Co.

## GEORGIA.

Atlanta—Brick Works.—S. F. Knapp, T. H. Cain, of Fulton county, Ga., and J. K. Cain, of Nebraska, have incorporated the South River Brick Co. for the manufacture of brick and sewer pipe, etc. Their capital stock is \$25,000.

Augusta—Boiler Works.—George R. Lombard & Co. are putting additional machinery in their boiler works.

Brunswick—Carriage Factory.—Allen J. Braswell is endeavoring to organize a stock company to manufacture carriages.

Cartersville—Water Works.—The city council has appointed a committee, Messrs. F. M. Ford, J. G. M. Montgomery and James Knight, to obtain plans, specifications and cost of a water works plant.

Pine City—Land Improvement.—The Pine City Tropical Home Co. has been organized with a paid-up capital of \$500,000 to improve land for suburban city, etc. P. P. Mast, of Springfield,

Ohio, is president. J. M. Miller, also of Springfield, is interested.

Swainsboro—Tobacco Factory.—The establishment of a tobacco factory is talked of.

## KENTUCKY.

Carrollton—Carpet Factory.—A. R. Marlett has started the manufacture of carpets.

Covington—Construction Company, etc.—E. F. Abbott, B. R. Morton and G. M. Abbott have incorporated the Cincinnati Contract, Construction & Improvement Co. to construct, improve and repair railways, bridges, etc. The capital stock is \$50,000.

Covington—Mining, etc.—G. M. Abbott, E. F. Abbott and B. R. Morton have incorporated the Washington Mining, Irrigating & Contracting Co. to purchase, sell and develop mineral lands, etc. The capital stock is placed at \$30,000.

Livermore—Cooperage.—A large cooperage plant is now being erected at Livermore by an Eastern company.

Louisville—Manufacturing Lubricants.—M. B. Cutter, R. F. Mitchell, J. H. Eaves and Jas. R. W. Smith have incorporated the Sumpter Automatic Lubricator Co. to manufacture and sell lubricators. Their capital stock is placed at \$500,000.

Louisville—Medicine Factory.—M. Makendorf and A. A. Schneiderhahn have incorporated the Golden Seal Remedy Co. to manufacture the Golden Seal remedy. Their capital stock is \$10,000.

Newport—Electric-light, Gas and Water Company.—James M. Glenn, Samuel Bugstaff and James C. Wright have incorporated the Suburban Supplying Co. to supply water, gas and electricity. The capital stock is \$100,000.

Newport—Manufacturing Illuminated Signs.—William R. Garner, Lucius Desha, Harry H. Deputy, Francis M. Kidd and Dudley A. Glenn have incorporated the Illuminated Street Car Sign Co. to manufacture Mr. Garner's patent illuminated sign. Their capital stock is placed at \$25,000.

## MARYLAND.

Baltimore—Brewery.—The National Brewing Co. will at once repair its brewery, reported in this issue as damaged by fire.

Baltimore—Paper-box Factory.—Jerome Diggs and William Osborn, of Baltimore county, and William H. Hamilton, G. Henry Uhlenberg and Charles Engelhaupt have incorporated the E. A. Jones Paper Box Co. to manufacture paper boxes, etc. Their capital stock is placed at \$10,000.

Baltimore—Vibrometer Manufacturing.—Emory J. Godman, Henry F. Garey, Harry F. Turner and William M. Conway, of Baltimore, and William Snowden, of Anne Arundel county, have incorporated the Vibrometer Co. for manufacturing purposes. Its capital stock is \$200,000.

Baltimore—Produce Company.—Robert E. Hopkins, Charles Knell, Harry Mann, Charles G. Mason and Louis J. Harrison have incorporated the Mason Produce Co. with a capital stock of \$10,000.

Derwood—Flour Mill.—The Gaithersburg Milling & Manufacturing Co. has purchased for \$10,800 Lyddane, Jones & Co.'s steam flouring mill at Derwood, and will operate it after January 1. The company has increased its capital stock.

Frostburg—Gas Works.—The Frostburg Gas Light Co. is making considerable improvements to its plant, putting in six retorts, etc.

Phoenix—Cotton-duck Factory.—The Mt. Vernon Co., of Baltimore, will erect a cotton-duck mill at Phoenix.

Washington, D. C.—Steam Cleaning and Scouring Plant.—A. Lerch is building a steam cleaning and dyeing establishment.

## MISSISSIPPI.

Bogue Chitto—Dry-kilns.—The Keystone Lumber & Improvement Co. is rebuilding its recently burned dry-kilns.

Friar's Point—Cooperage.—Edwin Haynes, John McKinley, C. M. Charnley, Louis Reece and James Charnley have incorporated the American Cooperage Co. to manufacture barrels, etc. Their capital stock is \$100,000.

Meridian—Wheel Factory.—The Queen City Wheel Co. will rebuild its factory, reported in this issue as burned.

Natchez—Undertaking Company.—John Carkeet, Samuel J. Perrault, Frank O'Brien and James Farrell have incorporated the Natchez Undertaking Co. with a capital stock of \$20,000.

Robinsonville—Saw Mill.—J. H. Vincent & Co. have built a saw mill.

## NORTH CAROLINA.

Burlington—Flour Mill.—Mr. Ireland has purchased site and will erect a roller flour mill.

Gibsonville—Cotton Mill.—The Minneola Manufacturing Co. will put in new machinery.

Jacksonville—Saw Mill.—Richard Lamb has recently completed a saw mill.

Laurinburg—Corn and Saw Mill.—H. McN. Lyth will put in a corn mill, possibly saw mill also.\*

Monroe—Electric-light Plant.—The citizens have voted an issuance of \$15,000 of bonds for the equipment of an electric-light plant. The mayor can give information.

New Berne—Shingle Mill.—Frank, Raspberry, Kehoe & Pearce have equipped a shingle mill.

North Wilkesboro—Tobacco Factory.—The Winston Land & Improvement Co. will build a tobacco factory.

Reidsville—Cotton Mill.—The Reidsville Cotton Mills have put in new machinery.

Reidsville—Bag Factory.—Boyd & Co., mentioned recently as to start a bag factory, will operate as the Boyd Manufacturing Co.

Wilson—Water Works.—J. L. Ludlow, of Winston, will make surveys for a \$60,000 water works system at Wilson.

## SOUTH CAROLINA.

Charleston—Phosphate Manufacturing.—Messrs. Arluckle & King have started an establishment for manufacturing phosphate preparations.

Columbia—Cotton Company.—Jasper Miller is president; A. J. Miller, vice-president, and S. P. Miller, secretary, of the Miller Cotton Co., reported last week as incorporated.

Greenwood—Saw Mill.—C. L. McClintock is erecting a saw mill.

Sumter—Lath, Saw and Shingle Mill.—Joel E. Brunson will erect a saw, shingle and lath mill.\*

## TENNESSEE.

Kingston—Flour Mill.—The establishment of a roller mill is talked of.

Memphis—Carriage Works.—The Memphis Carriage Co. has been chartered to manufacture carriages.

## TEXAS.

Barnum—Lumber Mill.—W. T. Carter & Bro. have put new boilers in their lumber mill.

Gainesville—Crematory.—W. H. Garretson, of Dallas, has received contract from the city council to erect a \$5,000 crematory, to be completed within ninety days.

Galveston—Soap Factory.—Morris Butts & Co., of Chicago, St. Louis and Kansas City, have built a soap factory in Galveston and commenced operations. Its monthly output is 375,000 pounds. The firm intend to build another factory in Galveston and are now preparing plans.

North Galveston—Brick Works.—The North Galveston Pressed Brick Co. has built works with daily capacity of 25,000 bricks.

North Galveston—Compo-board Factory.—The Gulf Compo-board Co. is erecting a \$20,000 factory for the manufacture of a substitute for plaster.

Uvalde—Water Works.—The Uvalde Water Supply & Power Co. is extending its mains about one and one-half miles.

## VIRGINIA.

Lynchburg—Electric-light Plant, etc.—The Piedmont Electric Light Co. and the Lynchburg Street Railway Co. have consolidated.

Newport News—Ice Company.—The Crystal Ice Co. has been organized with a capital of \$50,000. J. D. Woldenholme, president; W. A. Post, vice-president, and John A. Willett, secretary and treasurer.

Salem—Tannery.—The Virginia Steam Tannery will shortly change its product from sole to belting leather.

## WEST VIRGINIA.

Belleville—Oil Company.—The Belleville Oil Co. has been incorporated.

Bluefield—Flour Mill.—The building for Gooch & McCue's recently reported flour mill is about completed, and equipment of machinery for a capacity of 100 barrels will be put in.\*

Camden—Lumber Mills, etc.—William Armstrong, of Belpre, Ohio, and J. N. Camden, John B. McCoy, H. P. Camden and H. H. Moss, all of Parkersburg, have incorporated the Gauley Co. to own and operate lumber mills, coal mines, etc.; capital stock \$1,000,000.

Charleston—Manufacturing Machinery, etc.—Edward Waldron, J. C. Taylor and J. R. Adams, all of Philadelphia, Pa., are the incorporators of the Waldron Construction Co., reported last week.

Huntington—Mercantile Company.—The Barlow-Henderson Co. has been incorporated with a capital stock of \$45,000 for the purpose of dealing in dry goods.

Martinsburg—Electric-light and Power Company.—The Martinsburg Electric Light & Power Co. has been incorporated.

Pickens—Lumber Mills, etc.—The Pickens Co. has been incorporated by J. N. Camden, John B. McCoy, H. P. Camden and H. H. Moss, of

Parkersburg, and William Armstrong, of Belpre, Ohio. Its purpose is to own and operate lumber mills, coal mines, etc.; capital stock \$250,000.

## BURNED.

Arkansas City, Ark.—The lumber plant of the Desha Lumber & Planing Co. The loss is said to be \$600,000.

Baltimore, Md.—The National Brewing Co.'s plant, at Canton, was damaged to the extent of \$50,000.

Bryan, Texas.—G. S. Parker's cotton gin.

Floyd, Texas.—J. S. Robinson's cotton gin.

Laurens, S. C.—Allen Deal's cotton gin.

Lorena, Texas.—B. J. Maddox's cotton gin.

Meridian, Miss.—Taylor & Russell's saw mill.

Meridian, Miss.—The Queen City Wheel Co.'s factory; loss \$35,000.

Rici, Texas.—Bartlett & Haynie's cotton gin.

Sumter, S. C.—C. W. Chandler's gin.

## BUILDING NOTES.

Athens, Ga.—A new building will be erected for the Athens Industrial Home. Mrs. H. C. White can give particulars.

Charlotte, N. C.—Depot.—The Carolina Central Railroad Co. (office, Wilmington) will build an 80-foot extension to its depot.

Chattanooga, Tenn.—T. H. McCallie has been granted building permit for his three-story brick business building. It will cost \$14,000.

Gainesville, Fla.—School Buildings.—J. R. Eddins has been awarded contract to erect five public school buildings in Alachua county.

Glen Arm, Md.—Charles J. Bonaparte, of Baltimore, will build a \$60,000 residence near Glen Arm.

Hickory, N. C.—Warehouse.—A large brick warehouse will be erected for Shuford, Setzer & Co.

Houston, Texas—School Buildings.—The erection of additional school buildings at a total cost of \$40,000 is proposed. The mayor can give information.

Knoxville, Tenn.—Opera-house.—The Grand Opera-House Co., which was organized last April to build a \$180,000 opera-house, has, it is stated, effected financial arrangements for the commencement of work early in the spring. The building contemplated is to be a four-story fire-proof structure, 92x244 feet, with seating capacity for about 1,600.

Macon, Ga.—Jail.—The Bibb county jail will probably be enlarged by the erection of an addition to contain five cells and two or more cages. Gilbert Davis can give information.

Manor, Texas—Hall, etc.—J. J. Parsley has contract for building the two-story Masonic hall, 36x75 feet, lately mentioned. Contractor Williams, of Austin, has contract for a brick block for John G. Wheeler.

Monroe, N. C.—Hall.—The town will build a hall. The mayor can be addressed.

Orlando, Fla.—Depots.—The Florida Central & Peninsular Railroad Co. (office, Jacksonville) has purchased a site for its new passenger and freight depots. W. R. Tucker will have the work in charge.

Pine City, Ga.—Hotel.—The Pine City Tropical Home Co., of which P. P. Mast, of Springfield, Ohio, is president, intends building a 50-room brick hotel at Pine City.

Velasco, Texas—College.—R. McChinn reports that all arrangements have been closed for building the \$100,000 college by the managers of the Odessa College fund.

Washington, D. C.—John A. Milburn will build a \$12,000 brick residence to have hot-water heating apparatus, etc.

## RAILROAD CONSTRUCTION.

Anniston, Ala.—Railroad.—Mr. Gaboury and associates have been granted a franchise to build the Blue Mountain Mineral Railroad. The construction of this line, it is stated, will be followed by the extension of the East & West Railroad to Anniston as soon as that road is taken out of the hands of a receiver.

Bucatanua, Miss.—Railroad.—The Robinson Land & Lumber Co., which is building the Chickasawha & Jackson Railroad, writes that it is now constructing twelve miles of the road from the Chickasawha river in a northwestern direction, and the terminus eventually will be at Jackson, about 125 miles distant. The line will be standard gauge, and is designed as a lumber road. Five miles are already graded, and track-laying is in progress. George W. Robinson, of East Orange, N. J., is president of the railroad.

Clarksburg, Md.—Electrical Railroad.—Dr. Wm.



H. Hardey has started a movement to build an electrical railroad to connect the lines to be constructed from Baltimore to Ellicott City and from Washington, D. C., to Coleville.

Cumberland, Md.—Railroad.—Geo. H. Coryell, of Washington, D. C., in company with Chief Engineer Parsons, of the West Virginia Central & Pittsburgh Railroad, recently made an examination of the country from Cumberland north of the line he formerly located to Flintstone, seeking an outlet for the West Virginia Central connecting with the old survey at Fifteen Mile creek.

Greenville, Fla.—Railroad.—J. F. Le Baron, of Jacksonville, chief engineer of the Greenville & Pevey Railroad, has completed preliminary surveys for the line, and work will, it is stated, begin immediately. It is to extend from Greenville to Pevey, a distance of 21 miles.

Hagerstown, Md.—Railroad.—The Philadelphia & Reading Railroad Co. (office, Philadelphia, Pa.) is reported as to put a corps of surveyors in the field to survey a route from Five Forks, Pa., to East Hagerstown.

Harriman, Tenn.—Railroad.—The Harriman & Port Royal Railroad Co., Alfred E. P. Rockwell, president, has about completed surveys for its road between Harriman and Anderson, S. C., a distance of 220 miles.

Houston, Texas.—Railroad.—The Southern Pacific Co. is reported as contemplating the extension of its road to Virginia Point, opposite Galveston.

Houston, Texas.—Railroad.—The receiver of the Houston Belt & Magnolia Park Railroad has been authorized to extend the line to Harrisburg, previously mentioned, a distance of 1½ miles, where it will connect with the La Porte & Houston Railroad now under construction. This extension will necessitate building a bridge across Bray's bayou.

Jasper, Ala.—Railroad.—The Birmingham, Sheffield & Tennessee River Railroad Co. (office Sheffield) has completed the preliminary survey for its extension from Jasper to Birmingham, and is now securing right of way.

Mobile, Ala.—Electrical Railroad.—The property of the Mobile Street Railway Co., which recently obtained franchise to operate its lines by electricity, was lately sold under a court order and purchased by the Fidelity Trust & Safety Vault Co., of Louisville, Ky., representing the bondholders. The property includes about twenty miles of single track, and it is thought that the sale of the road will result in the carrying out of the plans for changing to electric power.

Newport, Ky.—Electrical Railroad.—An electrical railroad is to be built to Fort Thomas. The Fort Thomas Land Co. can give particulars.

Owensboro, Ky.—Railroad.—At a recent meeting of the stockholders of the Owensboro, Falls of Rough & Green River Railroad Co., the directors were authorized to issue \$6,000,000 of bonds to build the road to Middlesborough. Of this amount \$520,000 are to be devoted to completing the 16-mile extension from Fordsville to Horse Branch, previously mentioned. The road now extends from Owensboro to Fordsville.

Rockledge, Fla.—Railroad.—The Jacksonville, St. Augustine & Indian River Railroad Co. (office, St. Augustine) is surveying for the continuation of its extension now being built to Rockledge, from that point via Eau Gallie to Melbourne, a distance of twenty-four miles.

Ross, Texas.—Railroad.—It is thought that steps will be taken immediately after the reorganization of the Texas Central Railroad (office, Waco) for the building of a line from Ross to Waco or the purchase of the Houston & Texas Central line between the two points. The construction of a branch to the mines of the Pacific Coal Co., in Erath county, is also proposed.

Savannah, Ga.—Railroad.—It is announced that contract has been awarded for building the extension of the South Railroad from Savannah to Hart's Road. B. A. Denmark, president, can give particulars.

Stillmore, Ga.—Railroad.—The Stillmore Air Line Railway has been incorporated with George M. Brinson, president; Thomas S. Wyllie, Jr., of Savannah, vice-president, and H. J. Biddenbach, of Stillmore, secretary and treasurer. The company will complete the railroad previously reported as being built by Mr. Brinson. The road will run from Collins, on the Savannah, Americus & Montgomery, via Stillmore to Swainsboro. Ten miles of the line are in operation, and 300 hands are at work grading the remainder. It is understood that financial arrangements have been perfected for completing the road, and it is expected that the work will be finished in January next.

Swan Lake, Ark.—Railroad.—A. V. Stafford, of Pine Bluff, general manager of the Pine Bluff & Eastern Railroad Co., reports that the company is now at work extending its road to English, a distance of three miles. It expects soon to continue this extension further and widen the gauge of the road to standard.

Tallahassee, Ga.—Railroad.—L. F. Bellinger, 56 Gould Building, Atlanta, chief engineer of the

Georgia, Tennessee & Alabama Railroad, reports that efforts are being made to raise the necessary funds to build the road. The line is projected from Tallapoosa to Stevenson, Ala., a distance of 125 miles, and no contracts have been let, nor will any be made until financial arrangements are effected.

Vernon, Texas.—Railroad.—Report has it that the Missouri, Kansas & Texas Railroad Co. (office, Parsons, Kans.) will in March, 1893, inaugurate work on an extension from Coffeyville, Kans., diagonally across the Indian Territory to Vernon, a distance of about 300 miles.

Winston, Fla.—Railroad.—J. E. Griffin, president of the Winston & Bone Railroad, reports that the company hopes to get started within a year on the work of extending its road. The line is now completed between Winston and Phosphoria, a distance of twenty-one miles, and is projected from the latter point in a southwesterly direction through Folk, Hillsboro and Manatee counties to a point at or near the Manatee river. The entire length of the road will be about sixty miles.

## MACHINERY WANTED

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

Boiler.—Joel E. Brunson, Sumter, S. C., will buy a boiler.

Boiler and Engine.—Gooch & McCue, Bluefield, W. Va., will buy a boiler and engine.

Boiler and Engine.—W. L. & E. C. Holt, Burlington, N. C., want a 200 horse-power Corliss engine and boiler complete, second-hand.

Broom Machinery.—K. P. Alford, Max Meadows, Va., wants to correspond with manufacturers of broom machinery.

Corn Mill.—H. McN. Lyth, Laurinburg, N. C., wants a corn mill, second-hand.

Engine.—Joel E. Brunson, Sumter, S. C., will buy a 12x24 engine.

Engine Governor.—H. McN. Lyth, Laurinburg, N. C., wants a new Pickering governor.

Lathe.—Richard Lamb, Jacksonville, N. C., can use a second-hand Clement automatic wood lathe.

Lath Mill.—Joel E. Brunson, Sumter, S. C., will buy a lath mill.

Nailing Machines.—S. S. Savage, Ocala, Fla., will want nailing machines.

Printing Press.—S. S. Savage, Ocala, Fla., will probably want a printing press for cigar boxes.

Pulleys, etc.—S. S. Savage, Ocala, Fla., will want pulleys and shafting.

Rails.—N. E. Handy & Co., Lynchburg, Va., are in the market for 100 or 200 tons each 16, 20 and 25-pound second-hand T rails for relaying.

Sandpaper Machine.—S. S. Savage, Ocala, Fla., will want sandpapering machine.

Saw.—The Chattanooga Basket Co., Sherman Heights, Tenn., will buy a self-feed rip saw.

Saw and Shingle Mill.—Joel E. Brunson, Sumter, S. C., will buy saw and shingle mill.

Saw Mill.—H. McN. Lyth, Laurinburg, N. C., wants a saw mill.

Saws.—S. S. Savage, Ocala, Fla., will want rip saws.

Soap Machinery.—The Jones Soap Works, Red Bank, N. J., wants a laundry-soap cutter, a Dopp crutcher and a laundry-soap die.

Starch-manufacturing Machinery.—Machinery is wanted for making potato starch, second-hand. Address Box 65, Fort Meade, Fla.

Surfacer.—The Chattanooga Basket Co., Sherman Heights, Tenn., will buy a double surfacer.

Tobacco Machinery.—Braswell & Sherrod, Rocky Mount, N. C., will want machinery for manufacturing smoking tobacco. Prices desired on both hand and steam power.

B. W. Dawson, of Buchanan, Va., wants to correspond with builders of portable houses.

E. M. Hopkins, Savannah, Ga., wants to correspond with manufacturers of trussed hoops.

R. H. Dykers, Waynesville, N. C., wants enameled brick and tiles and barbed wire.

## SOUTHERN FINANCIAL NEWS.

### New Banks.

Apalachicola, Fla.—The organization of a bank with a capital stock of \$50,000 is being discussed.

Atlanta, Ga.—The Fidelity Banking & Trust Co. has commenced business with Samuel Young,

president; M. C. Kiser, vice-president, and Charles Runnette, cashier. The company will do a general banking business and will operate a savings department. The capital stock is \$200,000.

Beeville, Texas.—Heber Stone and D. C. Stone, of Brenham, and Dr. L. R. Creath have established a new bank in Beeville.

Orlando, Fla.—The Fruit Growers' Bank of Orlando has commenced business with Cecil G. Butt as manager. The capital stock is \$50,000.

Pensacola, Fla.—The Citizens' National Bank of Pensacola, which is being organized by L. Hilton Green and others, will have a capital stock of \$100,000.

Sistersville, W. Va.—The Tyler County Bank of Sistersville has been incorporated.

Baltimore, Md.—The Harlem Perpetual Mutual Building Association has declared a semi-annual dividend of 3 per cent.

Covington, Ky.—The Columbia Bond & Investment Co. has been incorporated by L. K. Martz, Paris C. Brown, John S. Ducker and others. The capital stock is \$5,000.

Houston, Texas.—James A. Baker, Jr., receiver of the Houston Belt & Magnolia Park Railway, has been authorized to issue receiver's certificates to liquidate all valid claims and to extend the road.

Houston, Texas.—An ordinance has been introduced in the city council providing for the issuance of \$40,000 of additional school bonds. The city is privileged to issue bonds to an amount not exceeding \$100,000 during any one year, and has during 1892 issued \$60,000 of bonds. The total value of property in the city subject to taxation is \$16,571,989.

Montroe, N. C.—The town has voted to issue \$5,000 of bonds for electric-light and town-hall purposes.

Rockwood, Tenn.—The Roane Iron Co. is said to be preparing to float \$350,000 of bonds.

Spartanburg, S. C.—The Spartan Mills have declared a semi-annual dividend of 3 per cent.

Stillmore, Ga.—The Stillmore Air Line Railway Co., George M. Brinson, president, has, it is understood, arranged for the sale of its bonds.

Washington, D. C.—The National Capital Brewing Co. has declared a dividend of \$15 per share.

Wilmington, N. C.—W. S. O'B. Robinson, receiver of the First National Bank of Wilmington, will, it is stated, soon declare two more 15 per cent. dividends.

## TRADE LITERATURE.

The American Ice Machine Co., of St. Louis, Mo., has issued a very complete illustrated catalogue of its ice-making machinery and system of refrigeration for cold storage houses, breweries, etc. The descriptions are brief but clear, treating of the important features of the machinery and its application to different industries. The direct expansion and brine system are fully discussed, and the entire requirements of a plant so explained as to give the intending purchaser a full knowledge of what is needed.

GENERAL CATALOGUE No. 27, issued by the Huyett & Smith Manufacturing Co., of Detroit, Mich., is a particularly neat and effective piece of work. The text and illustrations are clear, to the point and yet complete, the description and illustration giving exactly the points desired by users of this class of machinery. The catalogue covers the various branches of machinery made by the company—dry-kilns, brick dryers, hot blast apparatus, ventilating fans, blowers, engines, marine water-tube boilers, dust separators, cotton fans, exhaust fans, steam traps, blast gates, hangers and a number of other things. Two machines and pipe arrangements are of particular interest—one taking all shavings and dust from planers, shapers and other woodworking tools and carrying to a bin, and the other an arrangement for handling seed cotton and cottonseed. The catalogue is one which will be found valuable to all users of this class of machinery.

J. W. PENFIELD & SON, of Willoughby, Ohio, issue a series of catalogues of their clayworking and brickmaking machinery which are among the best specimens of trade literature that come to our office. They are well designed and finely printed upon good paper, but their chief merit lies in the fact that they fulfill the purpose for which a trade catalogue is intended; that is, they give a clear and concise description of the machines to which they are devoted, and they cover the points for which the reader is most likely to seek. The illustrations are a notable feature of the Penfield catalogues, the proprietors having recognized that money spent for first-class cuts of machinery is well invested. The latest of these catalogues at hand is devoted to upright stock brick machinery, which is supplemented by another pamphlet, "Some Facts About Upright Stock Brick Machinery." This catalogue describes the Penfield upright stock brick machine and pug mill, with plans and elevation for a complete plant of this character. All the accessory

machinery for handling and preparing clay and transmitting power are clearly illustrated and fully described.

## TRADE NOTES.

A. LEOPOLD, mining engineer, of Quebec, Canada, is busily engaged in making reports and assays in connection with American and Canadian mines.

THOMAS CARLIN'S SONS, of Allegheny, Pa., have just shipped the machinery for a dredge boat to be used in laying a pipe across the Susquehanna river at Marietta, Pa. They have on hand a large number of orders for their patent dry grinding pans, which are in use at many red and fire brick works, rolling mills, steel works and similar plants.

The works of the Weisel & Vite Manufacturing Co., of Milwaukee, Wis., were completely destroyed in the recent disastrous fire in that city. The company immediately secured temporary shops in which to carry on its work, and also arranged with four other establishments to work for it until its plant can be rebuilt. These arrangements enable it to carry out all contracts entered into and to execute all new orders.

GEORGE PRACOCK, of Selma, Ala., manufacturer of automatic self-oiling tram car wheels, mining cars, etc., has just received a large order from Mexico for ore cars, and lately shipped twenty cars to an ore mine near Johnson City, Tenn., fifty sets of wheels and axles to a coal mine near Chattanooga, Tenn., and twenty sets to an ore mine near Cedartown, Ga. Among recent orders was one for twenty ore cars for one of the largest ore mines near Birmingham, Ala.

The Berlin Iron Bridge Co., of East Berlin, Conn., has taken the contract for a new machine shop to be built at Newport News, Va., for E. C. Hillyer & Co. The building will be eighty-two feet in width, divided into a central portion forty feet between crane girder columns, with a wing on each side twenty-one feet in width. The wings will be two stories high, the balcony being used for light work. The central portion of the building will be controlled by a 20-ton traveling crane.

The works of Mr. Louis P. Brecht, 314 W. Franklin street, Baltimore, Md., are equipped with all modern machinery, tools and appliances for the manufacture of cast and wrought iron work of every description, including iron work for buildings, also fancy gates, iron railings, settees, etc. These specialties are unsurpassed for quality of materials, workmanship, etc. The fine ornamental iron work on a number of the large and fine buildings in Baltimore has been done by Mr. Brecht.

J. W. TAYLOR, of Atlanta, Ga., who is Southern agent for the Stilwell & Bierce Manufacturing Co., has taken an order from the General Electric Co. for two pair of 30-inch horizontal turbine wheels, with the necessary feed pipe, draft tubes, etc., for their new electric plant at Asheville, N. C. The wheels will operate under thirty-two feet head of water and give 930 horse-power. He has also placed with the Union Paper Mills at Conyers, Ga., a new 20-inch wheel, with draft tube and gears.

The Curtis Steel Roofing Co. is the name of a new concern which has recently started at Niles, Ohio, and will manufacture high-grade steel roofing. The plant is well equipped with new and improved machinery, and although only started for a few weeks, several large orders for roofing have been received from different parts of the country. The works are located on one of the lines of the Pennsylvania Railroad, giving excellent shipping facilities. The company is prepared to fill all orders promptly.

The Smith-Courtney Co., of Richmond, Va., has recently furnished to the Black Rock Mining Co. for use in their mines in the Shenandoah valley a Evers friction hoisting engine to be used in a shaft in mining iron ore. The outfit was complete with boiler, ropes, pumps, etc. The Smith-Courtney Co. has also just furnished a hoisting engine and boiler for pile driving to Capt. John A. Curtis, who has a large government contract on the James river; a complete planing mill outfit for J. L. Tallafiero, of Richmond, to equip his new mill, and a large double cylinder, double drum quarry engine is just being set up for the Goodwin & Byron Quarry Co.

The Lupkin Rule Co., of Saginaw, Mich., has brought out a new steel tape, made of the finest quality imported steel, which has a new opening and winding device which will be appreciated by all users of steel tapes. In the ordinary tape the winding handle folds into a recess in the centre of case. It generally becomes fastened in, and in order to open it must be picked out with a nail or knife. This new tape also has a handle which folds like the others, but on the opposite side is a little knob, and on pressing this the handle flies open. The knob is small and not in the way when carrying the tape in a pocket. The manufacturers will in future make only this form of

tape, and have decided to make no advance in price over the old list.

THE Jacksonville (Texas) Canning Co. has contracted with Daniel G. Trench & Co., canning factory outfitters, of Chicago, for a complete outfit of the latest improved canning machinery.

THE Cushman Iron Co., of Roanoke, Va., has just closed the contract for furnishing the iron work for the Kenova station for the Norfolk & Western Railroad, and will begin work on the same at once. This company has nearly completed its contract on the Bluefield bank building, Bluefield, W. Va., for which Messrs. J. C. Jones & Co. are the builders, and is well along on the iron work for the Chamber of Commerce building at Richmond. The Cushman Iron Co. has opened a branch office in Richmond at No. 319 East Main street, and has put the same under the management of its treasurer, Mr. A. J. Coffin.

THE following are some of the buildings equipped during the past two months with the swinging hose rack manufactured by John C. N. Guilbert, 115 Broadway, New York: Aurora Cotton Mills, Aurora, Ill.; Merchants & Miners' Transportation Co.'s freight house, Providence, R. I.; twelve; Woolson Spice Co., Toledo, Ohio, six; Ford Morocco Co., Wilmington, Del., two; Lehigh Salt Mining Co.'s breaker, Le Roy, N. Y., two; Fort Wayne (Ind.) Street Railway Co.'s power-house, four; Holstein Woolen Co., Salem, Va., two; Western Pennsylvania Asylum for Insane, Dixmont, Pa., two; Maine Eye and Ear Infirmary, Portland, Me., two; courthouse, Woodstock, Canada, twelve; Freehold Loan & Savings Co., Toronto, Canada; Victoria Methodist College, Toronto, Canada; Central Presbyterian Church, Denver, Col., four.

AN important administrator's sale of property suitable for manufacturing purposes is to take place December 1st at the new Real Estate Exchange, 203 E. Fayette street, Baltimore. This property is situated on the middle branch of the Patapsco river, fronting 455 feet on the river, with the right to build to port warden's line. It contains three acres and twenty-two perches and adjoins Horner's Fertilizer Works on the north, and is in the neighborhood of the Camden Consolidated Oil Works. It is within a square and a-half of the roundhouse of Baltimore & Ohio Railroad, with whose tracks it has the right to connect on street twenty-five feet wide, running from this property to Wells street. Its eligible location and accessibility presents one of the most attractive opportunities for either capitalists or manufacturers as an investment.

RECENT sales by the Jeffrey Manufacturing Co., Columbus, Ohio, include the following: Coaldale Mining & Manufacturing Co., Coaldale, W. Va., electric coal-mining plant, consisting of engine, boilers, dynamo and four Jeffrey electric coal-mining machines and electric drill; Congo Coal Mining Co., Columbus, Ohio, additional power plant, including dynamo and engine (second order); Osage Coal & Mining Co., Indian Territory, one Jeffrey electric mining machine (second order); John H. Wood & Son, Pittsburg, Pa., six Jeffrey air mining machines and three power drills; Sturgis Coal Co., Sturgis, Ky., one Jeffrey air mining machine and two power drills; Hocking Valley Coal Co., Nelsonville, Ohio, one Jeffrey air mining machine (third order); also orders for power coal drills for shipment to Wyoming, Colorado, Indiana, New York and Scotland.

THE plant of McLanahan & Stone, Hollidaysburg, Pa., manufacturers of improved ore and phosphate-dressing machinery, is busily engaged on orders from different parts of the South. Among their recent orders is one set of four dash ore jigs for manganese from the Unaka Iron Co., Unicoi, Tenn., and one large patent steel log ore-washer for the Southern Iron Co., Aetna, Tenn. The phosphate companies throughout Florida have recognized the superiority of their improved log washers, and many orders are being received for both wood and steel logs. Wood log machines have been shipped recently to the Standard Company, Archer, Fla.; the Trenton Phosphate Co., Fort Fanning, Fla.; while the Peninsular Phosphate Co., Archer; T. W. Pitts & Co., Fort White, Fla.; the Albion Mining & Manufacturing Co., Albion, Fla., are among those having purchased their patent steel log machines.

#### OPPORTUNITIES FOR INVESTMENT

We shall be pleased to answer communications and give information concerning the following opportunities for investment. Address all correspondence to the MANUFACTURERS' RECORD, Baltimore, Md., and be particular to give the number of the advertisement to which you refer.

No. 1.—STREET RAILWAY.—The owners of a valuable street railway franchise in Texas, extending through the thickly-settled portion of a large city and into the suburbs, desires to place the securities of the company or to negotiate a loan to be used in the construction of the road. The cost of building the line is estimated

at \$50,000, and it is calculated to yield a gross annual revenue of \$30,000.

No. 2.—COTTON MILL.—A part owner in a Southern cotton mill which has been in successful operation for a number of years, desires to obtain money for the purchase of the other interests in the property. Ample security will be given for a loan of \$40,000.

No. 3.—IRON FOUNDRY.—An iron foundry engaged in the manufacture of a specialty for which there is a ready sale, has demand for twice its present output. The company desires to increase its capital to the extent of \$10,000 for the purpose of doubling the capacity of its plant.

No. 4.—HOTEL.—A hotel in a prosperous Southern city, which cost \$50,000, can be purchased for \$45,000, including all furniture and fixtures and about seventy-five lots adjoining, 25 by 150 feet. House is new and in good condition. Connects with business part of the city by granolithic sidewalks, and electric cars pass the hotel every five or ten minutes. Reasonable terms will be made with a responsible purchaser.

No. 5.—RAILROAD CHARTER.—The holders of a charter for a railroad 340 miles in length desire to secure the capital necessary for its construction. The line runs for nine miles through large deposits of iron ore; 100 miles of the line is through valuable fields of canal and coking coal. There is a rich oil field on the route, and for 100 miles it traverses valuable timber lands containing oak, walnut, cherry, poplar and other woods. In the tributary agricultural territory 100,000,000 pounds of tobacco are produced.

No. 6.—PHOSPHATE LAND near Eureka, Fla., in the phosphate belt. It is heavily timbered with long-leaf pine; also a small tract near Fort Meade, Fla. Several small tracts in Marion, Orange, Lake, Polk, Pasco and Putnam counties, Fla., suitable for orange and vegetable growing.

No. 7.—A MANUFACTURING COMPANY in Texas desires to place \$28,000 ten-year 8 per cent. mortgage bonds, the total issue being \$60,000, of which \$32,000 has already been sold. The proceeds are to be used for final payments on machinery and for working capital. The bonds are secured by the entire property of the company, consisting of factory building, machinery and real estate, all of which has a clear title and is free of any incumbrance.

No. 8.—PHOSPHATE LAND.—600 acres pebble phosphate land within one and one-half miles of two important and competitive railroads. Extensive deposits in sand and marl matrix from two to fifteen feet deep, and ranging from 30 to 80 per cent. pebble. Analyses show from 60 to 80 per cent. phosphate of lime.

No. 9.—A tract of land located in the suburbs of Macon, Ga., and admirably adapted to manufacturing purposes, is offered for sale at reasonable price. The property is at the junction of three railroad lines, has abundant water supply, labor can be obtained cheaply, and all conditions requisite for industrial enterprises are present.

No. 10.—About 10,000 acres of mineral and timber land in one tract in North Carolina can be purchased cheap. The minerals are copper, iron, silver and nickel.

No. 11.—A tract of about 10,000 acres of timber land near Bristol, Tenn. Contains also several large deposits of iron ore which will soon be accessible by railroads now under construction.

No. 12.—About 17,000 acres of coal and timber land in Scott and Wise counties, Virginia, near to both the Norfolk & Western and South Atlantic & Ohio Railroads.

No. 13.—A copper ore property is for sale in North Carolina. There is an extensive deposit of ore upon which some development has been done with results that indicate the existence of a valuable property.

It is said that the tobacco crop in Florida is unusually fine this year and the percentage of wrappers much greater than last year. This will, it is thought, hold prices up to thirty or forty cents per pound. Growers are recommended to hold their leaf and market it slowly as the demand requires, thus avoiding the reduction in values which would come if it were forced in now.

THE citizens of Woodville, an ambitious town in Southwestern Mississippi, have under way a movement to establish a cotton factory. The town is located on a branch of the Illinois Central twenty miles from the Mississippi river, and is situated in a section growing a large quantity of long-staple cotton, and notable for originating the celebrated Southern Hope variety.

It enjoys the important advantages of cheap labor and an abundance of fuel, and it is desired to interest parties possessing experience and capital in the proposed enterprise. The citizens are prepared to invest capital in such a factory and lend it every encouragement, but lacking the needful experience, wish to interest outside parties. The prime movers in the project are L. T. Ventress and W. A. Elder, either of whom would be glad to answer correspondence on the subject.

HON. L. B. WOMBWELL, commissioner of agriculture of Florida, reports that from information received from correspondents in the twenty-three cotton-producing counties it appears that three-fourths of the crop has been gathered and four-fifths of this is out of the hands of the producers. The total yield of both Sea Island and upland is estimated as 48 per cent. as compared with 1891.

APPLICATION has been made for a charter for a steamboat company who propose running three steamers between Richmond and Norfolk, Va. The capital stock is \$10,000, with privilege of increasing to \$300,000. The officers named for the first year are M. E. Ingalls, president; A. H. Drewry, first vice-president; J. D. Platt, second vice-president; E. C. Barney, secretary and treasurer, and C. P. Burgwyn, engineer. The plan is to provide handsome and speedy steamers to run up and down the James river in daylight, giving passengers an opportunity to see places noted in the early colonial history of Virginia. The boats now running between those two points have neither the speed nor accommodations for passengers or freight which are required.

GEN. R. T. DYRENFORTH, J. W. Dickinson and J. H. P. King are in San Antonio, Texas, endeavoring to secure from the people of that city a contribution of \$2,000 to be used in carrying on rainmaking experiments. It is said that General Dyrenforth has a larger supply of explosives and more complete equipment otherwise than during the experiments last year. Messrs. King and Dickinson are representatives of parties who have supplied money with which to purchase the material. They say that if the experiments succeed they will go to the legislature and ask an appropriation of ten cents or so per acre for supplying rain to any given territory, the amount of rain to be measured by a gauge. They feel sanguine of success, and consider the experiment on purely a business basis.

#### Winter Excursion Tickets on the Pennsylvania Railroad.

The Pennsylvania Railroad Co. has placed on sale at all its principal ticket offices excursion tickets to all the prominent winter resorts. This territory includes the resorts of New Jersey, Virginia, North and South Carolina, Georgia, Tennessee, Florida and Cuba. The tickets are sold at the usual low rates, and the return coupons are valid until May 30th, 1893.

The magnificent facilities of the Pennsylvania Railroad, with its many connections, make this the favorite line for winter travel.

#### Winter Tours to California, Florida and Other Points of Interest.

Some idea of the amount of traveling done by Americans as a people, and the comfort and luxury at their command, is gathered from the Pennsylvania Railroad Co.'s announcement of its personally-conducted tours for 1893.

First comes a series to the Golden Gate, starting from New York, Philadelphia and Harrisburg February 8th, March 2d and March 29th, 1893. Tourists will travel by superbly-appointed special trains of Pullman drawing-room sleeping, dining, smoking and observation cars under the supervision of a Tourist Agent and Chaperon.

Next in importance comes a series of five to Florida—January 31st, February 14th and 28th, March 14th and 28th. The first four admit of two whole weeks in the Sunny

South, while tickets for the fifth tour are good to return by regular trains until May 30th, 1893.

They will be conducted on the same general principles and maintained at that high standard manifested on all Pennsylvania Railroad Co.'s personally-conducted tours. For information and detailed itineraries now being prepared apply to Ticket Agents or Tourist Agents, 849 Broadway, New York; 860 Fulton street, Brooklyn, or 233 South Fourth street, Philadelphia. †

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# MANUFACTURERS' RECORD.

## EQUIPMENT TRUST FOR \$2,000,000.

Of the Equipment Trust Loan, Series B, of \$2,000,000, made with the Finance Company of Pennsylvania, there has been expended \$1,692,830.97 for 42 locomotives, 10 passenger, 3 combination, 4 baggage and 2,395 freight cars, leaving still unexpended on June 30, 1892, \$307,169.03, to be expended for equipment to be constructed.

## SINKING FUNDS.

The company has maintained through the year its cash appropriations to the Sinking Funds of its Sterling Loan due in 1927, and the P. and C. Consolidated Mortgage Loan due in 1926. These two Sinking Funds now amount to \$1,202,724.

The investment for the appropriations and increments of the Main Line Sinking Funds, in pursuance of the agreement to that effect, have been made in the Consolidated Mortgage five per cent. one hundred-year Bonds of this Company, and now amount to \$4,270,000 in these Bonds, in addition to \$5,172,272 of other first-class interest bearing Bonds.

## PAYMENT TO THE CITY OF BALTIMORE ON ACCOUNT OF THE PURCHASE OF ITS INTEREST IN THE PITTSBURGH AND CONNELLSVILLE RAILROAD.

The Company has made its sixteenth annual payment of \$40,000 to the City of Baltimore on account of the purchase of the city's interest in the Pittsburgh & Connelville Railroad, leaving still due \$360,000 of the original sum of \$1,000,000.

## PAYMENT OF EQUIPMENT TRUST BONDS.

The Equipment Trust obligations of the Company have been issued as follows:

Car Trust of 1887.....	\$2,500,000
Equipment Trust, Series A, 1889.....	1,000,000
Equipment Trust, Series B, 1890.....	2,000,000
	\$5,500,000

Ten per cent. of the principal sum is payable annually, and there has been accordingly paid as follows:

The Car Trust Loan of 1887 for \$2,500,000, five annual payments, aggregating.....	\$1,250,000
The Equipment Trust Loan of 1889, Series A, for \$1,000,000, three annual payments.....	300,000
The Equipment Trust Loan of 1890, Series B, for \$2,000,000, one annual payment.....	200,000
Total payments.....	\$1,750,000

Leaving on June 30, 1892, \$307,169.03 of Series B yet to be expended in equipment.

## SPECIAL LOANS AND BILLS PAYABLE.

There is a decrease of \$77,440.41 under this head, as compared with September 30, 1891, while "Advances for Construction and Permanent Improvement on Lines Leased and Operated" and "Due from other Railroads in General Account" (Table E) show an increase of \$1,517,413.35.

## RELIEF DEPARTMENT.

The report of the Relief Department for the nine months ended June 30, 1892, will be printed for distribution among the members. The following shows the condition of that Department:

The active membership at the close of the fiscal year was 22,930, being an increase of 617 as compared with the previous year.

The receipts and income during the nine months ended June 30, 1892, have been.....	\$ 315,100.28
And the disbursements have been.....	321,257.53
From the commencement of the Relief Association to the close of the fiscal year the disbursements have been.....	3,468,385.78
The amount due depositors by the Savings Feature was:	
At the close of the fiscal year of 1891.....	577,429.27
At the close of the fiscal year of 1892.....	612,547.05
The deposits during the fiscal year have been.....	219,086.04
The withdrawals of the depositors during the fiscal year have been.....	103,565.26
The amount due by borrowers under the provision of the Savings Feature was:	
At the close of the fiscal year, 1891.....	408,783.66
At the close of the fiscal year, 1892.....	495,178.94

An extra dividend at the rate of 1 per cent. per annum was declared on all deposits drawing interest on June 30, thus making the interest for twelve months equivalent to 5 per cent.

The funds of the Savings Feature are loaned only to employees of the Company, to enable them to purchase or improve homesteads or to release liens thereon.

At the close of the fiscal year there were 201 names on the Pension roll, the disbursements on this account for the year having been \$22,381.17, and for the whole period \$160,129.81.

## PHILADELPHIA DIVISION.

The business on the Philadelphia Division continues to steadily improve.

The following is the result for the nine months ended June 30, 1892:

Gross Earnings.....	\$1,441,004.82
Expenses.....	1,025,947.57
Net Earnings.....	\$415,057.25

The following is the comparison for the twelve months ended September 30, 1891, (September partly estimated,) with September 30, 1891:

	1891.	1892.	Increase.
Gross Earnings.....	\$1,890,637.96	\$2,056,414.04	\$165,776.08 or 8.25 per cent.
Expenses.....	1,343,181.67	1,408,177.80	64,997.13 or 4.81 per cent.
Net Earnings.....	\$547,456.29	\$648,236.24	\$100,779.95 or 15.49 per cent.

## STATEN ISLAND RAPID TRANSIT RAILROAD.

The following shows the results of the operations of this line for the nine months ended June 30, 1892:

Gross Earnings.....	\$642,386.47
Operating Expenses.....	463,609.22
Net Earnings.....	\$178,777.25

The following is the comparison for the 12 months ended September 30, 1892, with September 30, 1891:

	1891.	1892.	Inc.	Dec.
Gross Earnings.....	\$1,025,597.69	\$1,045,612.07	\$20,014.38	
Operating Expenses.....	631,193.61	656,176.24	24,972.63	
Net Earnings.....	\$394,404.08	\$389,435.83	\$4,968.25	
Interest, Rentals and Taxes.....	355,074.55	347,322.60	7,751.95	
Surplus.....	\$39,329.53	\$42,113.23	\$2,783.70	

During the past year, one of the largest Steam Coal Mining Companies in the country, heretofore shipping from Jersey City, has constructed a pier and built its terminals in the vicinity of St. George, Staten Island.

Early in 1893, there will be completed at St. George, a commodious passenger station and freight yard, and an extension of the Line to the South Shore.

These much needed improvements will add largely to the business of this Company.

## GRAFTON AND BELINGTON RAILROAD.

The Grafton and Greenbrier Railroad Company has been reorganized under the above title.

The change of the old Line from a narrow gauge to a standard gauge, referred to in the last Annual Report, was completed May 1 last.

The road thus improved has become an active feeder to the Main Line.

## WEST VIRGINIA AND PITTSBURGH RAILROAD.

By 1st of December next the entire Line, with the exception of a short section from Camden-on-Gauley to Cherry River, will be completed and in operation.

Even in its incomplete condition the Road has been doing a very active business in passenger and freight traffic, and up to the termination of its fiscal year (June 30, 1892,) has paid its working expenses and fixed charges.

The development of the extensive and immensely valuable lumber district of West Virginia traversed by this Line, has, even in the incomplete condition of the Road, exceeded the expectations of its promoters.

The one thousand lumber cars constructed specially for this service have proved insufficient for the demand.

## BALTIMORE BELT RAILROAD.

The completion of this Line has been delayed by the thorough system of construction required by the Management and the more extended plans adopted for the Passenger Stations. It will probably not be in condition to operate until the early summer.

## THE PITTSBURGH AND WESTERN RAILWAY.

The Company has acquired the controlling interest in this Line upon the terms referred to in last Annual Report.

The extended improvements needed upon the road-bed, &c., are being vigorously pushed.

When these are completed, the Company will have another, and a very superior through line to Chicago, under its ownership or direct control, via the Main Line to Cumberland, the Pittsburgh and Connellsville System to Pittsburgh, the Pittsburgh and Western Railway to Akron, the Akron and Chicago Junction Railroad to Chicago Junction, the Baltimore and Ohio and Ohio and Chicago Division to Chicago.

## LANCASTER AND CECIL RAILROAD.

By the close of the present calendar year, the Company will have completed the construction of a line leaving the Philadelphia Division at Childs' Station, and extending north toward Oxford, Pennsylvania, a distance of 4.54 miles, reaching the extensive Providence paper mills, as well as the Marley paper mills, the Harlan paper mills, the Cecil paper mills, and the Walnut Valley flouring mills. It is expected the completion of this line will largely increase the traffic derived by the Company from these industries.

## STATE LINE RAILROAD.

By June 1, 1893, it is expected the State Line Railroad will be completed from Redstone Junction to the State Line, near Point Marion, Pennsylvania, and that the Fairmont, Morgantown and Pittsburgh Railroad will be completed from Morgantown to a connection with the State Line Railroad at the State Line, near Point Marion, a combined distance of 28.53 miles.

This will connect the Company's Fairmont, Morgantown and Pittsburgh Railroad with the Uniontown Branch of the Pittsburgh and Connellsville Division, thus giving the Company a direct line to Pittsburgh and the West from those portions of West Virginia abounding in lumber, coal and other traffic commodities.

## METROPOLITAN SOUTHERN RAILROAD.

This line has been constructed from Metropolitan Southern Junction, on the Metropolitan Branch near Washington, to Chevy Chase, a distance of two miles.

The line will develop some important suburban settlements in the vicinity of Washington, D. C.

## WORLD'S COLUMBIAN EXPOSITION.

Under an arrangement with the Management of the World's Columbian Exposition, this Company recently completed an extension of its line into the grounds of the Exposition, leaving the Main Line a short distance west of its South Chicago Station.

It has been operated since April 28 last for the delivery of building materials, etc., for the Exposition.

It is proposed to open this "Exposition Line" to any of the railways entering Chicago, which can connect therewith upon a wheelage charge.

This Branch has proved useful to the Exposition, and, when the latter is opened, it is believed it will prove advantageous to the Company.

## TERMINALS.

The completion of the negotiations for terminals at Chicago, referred to in last Annual Report, enabled the Company to occupy the Grand Central Passenger Station since December 1, 1891, and separate freight station and yards adjoining the same.

The Baltimore and Ohio Connection Railroad, connecting the Rock Island Line with the Chicago Central Railway—with both of which roads the Baltimore and Ohio Company has permanent leases, was completed and opened on the eighth of October.

This will furnish the Company with a superior route from its main line, at South Chicago into one of the largest and best located passenger and freight stations in Chicago, which cannot fail, in the immediate future, to materially increase the business of its system west of the river.

At Clarksburg and Fairmont large additions are being made to the terminals to accommodate the rapidly increasing business from the West Virginia and Pittsburgh and Monongahela River Railroad systems.

For other new terminals, reference is made to the last Annual Report.

The greater part of the work upon the "large extensions to sidings, and the third tracks on the Philadelphia, Main Stem, Pittsburgh and Trans Ohio Divisions," referred to in the last Annual Report, will be completed within the present calendar year.

The Management has continued in the past fiscal year the large expenditures needed to improve the condition of the property in every department, with a view of attaining that higher standard of efficiency which each year of rapid railroad development demands.

Accordingly, the following large expenditures, which are included in Operating Expenses, have been made during the nine months ended June 30:

For Maintenance of Equipment.....	\$2,737,201.73
For Maintenance of Way and Structures.....	2,269,813.35

## STOCK DIVIDEND AND INCREASE OF COMMON CAPITAL STOCK.

The following resolutions of the Board of Directors, adopted November 11, 1891, will fully inform the Stockholders upon these two subjects:

Whereas, for the fiscal year terminating September 30, 1889, 1890 and 1891, the Net Earnings and Income of the Company have amounted to the sum of \$4,545,724.34—as shown by its reports—after the payment of Dividends on the First and Second Series of Preferred Stock to the amount of \$900,000.00, the adjustment of Sinking Fund Accounts, and after charging to Operating Expenses during those years over \$1,000,000.00, expended in betterments and improvements of the physical condition of the property and in bringing it up to a higher working standard;

And whereas, after charging to "Profit and Loss" of those years the sum of \$1,617,051.09—a deduction which has been deemed proper to make by reason mainly of depreciation of the value of equipment which properly should have been made during the year 1888—there still remains of such Net Earnings and Income the sum of \$3,311,455.25, which sum, in addition to the amounts derived from other sources, has been used in reduction of the Bonded and Car Trust Indebtedness of the Company to the amount of \$1,325,102.64, and also for the permanent improvement of the Railway, and for new construction, all of which constitute valuable additions to the property and to the Capital of the Company.

Therefore resolved, that a dividend of twenty (20) per cent. be declared upon the Common Stock of this Company, for the period ending September 30, 1891, payable on and after the 31st day of December, 1891, in the Common Stock of the Company, at the Office of the Treasurer, to the Stockholders of record at 3 P. M. on the 30th day of November, 1891, and for this purpose the Transfer Books of the Company will remain open from 9 A. M. on the 17th day of November until 3 P. M. on the 30th day of November, and will, from that period, remain closed until 10 A. M. on December 10, 1891.

Whereas, during the preceding three years, the Company has deemed it wise to expend its entire Net Earnings and Income in much needed additional construction and betterments of its railroad system.

And whereas, these expenditures must continue in the future, in order to establish and maintain all the lines of the Company at the high standard of efficiency now necessary for remunerative results; in addition to which large expenditures will be required for the improvements and extensions necessary to avail of the large business, freight and passenger, that will undoubtedly grow out of the World's Fair at Chicago;

And whereas, it is not deemed desirable to continue longer the appropriation of the Net Earnings and Income of the Company to such expenditures, but to provide for the same out of sales of its Common Stock, in such amounts and at such periods as may be deemed expedient;

Therefore, be it resolved, that an issue of the Common Stock of the Company, of the par value of \$5,000,000.00 and the same is hereby authorized, and the President and Finance Committee are hereby empowered to sell this issue, in whole or in part, at such times as may be by them deemed expedient. The above resolutions were carried out by the issue of the Dividend Stock, and by the sale, to a syndicate, of the entire authorized issue of \$5,000,000.00 Common Capital Stock.

The proceeds of the latter are being, and will continue to be, applied to the extension of the Company's lines, and in the improvement of its properties.

Attention is called to the following tables attached to this Report, which give in detail information connected with the several subjects:

- Earnings and Expenses of all lines East and West of the Ohio River.
- Statement of Net Earnings and Income and Fixed Charges on all lines of the system, together with the profit or loss upon each, for the nine months ended June 30, 1892.
- Statement of Net Earnings and Income and Fixed Charges on all lines of the system, together with the profit or loss upon each, for the twelve months ended September 30, 1892.
- Statement of Income from sources other than the operation of the Railroad System.
- Statement of Interest Charges, Taxes, Rents, etc.
- General Balance Sheet.
- Profit and Loss.
- Statement of entire Funded Debt of the Baltimore and Ohio Railroad Company's System, including that for account of the Baltimore and Ohio and Chicago Railroad Companies, the Parkersburg Branch Railroad Company, the Philadelphia Branch and the Baltimore and Philadelphia Railroad Company; also the Funded Debt of the Pittsburgh and Connellsville Railroad Company.
- Bonds for which the Company is Guarantor.
- Leases of the Company.
- Profit and Loss, Washington Branch.

The President and Directors take great pleasure in again acknowledging the specially faithful and efficient services of the officers and employees of the Company during the past fiscal year.

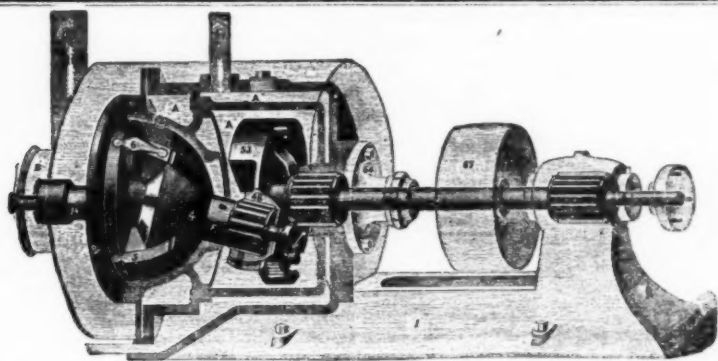
By order of the Board,

CHARLES F. MAYER, President.

The foregoing Report was unanimously accepted and approved.

The meeting then proceeded to the election of Directors for the ensuing year. The following gentlemen were unanimously elected to serve by a vote of 125,359 votes: James Sloan, Jr., Wm. H. Blackford, Wm. F. Burns, Aubrey Pearce, George DeB. Keim, Wesley A. Tucker, Maurice Gregg, J. Wilcox Brown, William F. Frick, Geo. A. Von Lingon, George C. Jenkins, Charles J. M. Gwinn. Messrs. George J. Appold, Thos. I. Carey and Gilmot Meredith acted as Judges of Election.





The above illustration shows the working parts of the only steam engine worthy of being called **high speed**. It is known as the

### American High Speed Engine.

It has no competitors.  
Runs easily and smoothly  
**1000** REVOLUTIONS and more,  
in small sizes, and proportionally fast in larger sizes.

**Unsurpassed for Economy**  
and close automatic government.

**DYNAMOS,**  
**CIRCULAR SAWS,**  
**FANS, BLOWERS,**  
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**UNITED STATES ENGINEER OFFICE.**  
WILMINGTON, N. C. November 12, 1892.  
SEALED PROPOSALS for building an earth dike at South Island Winyaw Bay, S. C., will be received at this office until 11 A. M., November 30, 1892, and then publicly opened. Specifications, blank forms, and all available information will be furnished on application at this office.—  
W. S. STANTON, Major Corps of Engineers, U. S. A.

**TREASURY DEPARTMENT,** office of the Supervising Architect, Washington, D. C. November 19th, 1891. SEALED PROPOSALS will be received at this office until 2 o'clock P. M., on the 20th day of December, 1892, and opened immediately thereafter, for all the labor and material required for the excavation, foundation, stone and brick work, floor and roof construction, roof covering, etc., for the U. S. Custom House and Postoffice Building at St. Albans, Vermont, in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at St. Albans, Vermont. Each bid must be accompanied by a certified check for a sum not less than two per cent. of the amount of the proposal. The right is reserved to reject any or all bids, and to waive any defect or informality in any bid, if it is deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, Proposal for the excavation, foundations, stone and brick work, floor and roof construction, roof covering, etc., for the U. S. Custom House and Postoffice Building at St. Albans, Vermont, and addressed to W. J. EDBROOKE, Supervising Architect.

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FOR MANUFACTURING PURPOSES.  
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By virtue of an order of the Orphans' Court of Baltimore City, the undersigned, Administrator, with the will annexed of John W. Fitchberger, deceased, will sell at the REAL ESTATE EXCHANGE, ROOM 122 E. Fayette St., Baltimore, Md., on THURSDAY, Dec. 1, 1892, THE FOLLOWING DESCRIBED LOT OF GROUND: Beginning for the same at a post standing on the easternmost side of Gould street at the north corner of a lot heretofore leased by Alexander Gould, Sr., to James Coburn, and running thence north 46 1/2 degrees east, bounding on said street 455 feet to the outline of Gould's land; thence south 41 1/2 degrees east bounding on said outline 370 feet to the waters of the Middle Branch of the Patapsco river (at common tide); thence running and bounding on the waters of said river the two following courses and distances, south 67 1/2 degrees west 55 feet, south 55 1/2 degrees west 265 feet to the east corner of James Coburn's lot aforesaid and thence north 43 1/2 degrees west, bounding on said Coburn's lot 260 feet to the beginning, containing three acres and twenty-two square perches of land, more or less, with the use and benefit of Gould street and also of a street 25 feet wide, commencing 5 feet southwesterly from the dividing line between the lands once owned by John S. Gittings and the land above described, and on the first line thereof, and running in a northwesterly direction and parallel with the dividing line aforesaid until it intersects Wells street, (formerly Ohio street,) with the right to lay tracks on said 25 foot street to connect with the Baltimore & Ohio Railroad. This property is subject to a ground rent of \$45, payable in moieties on the first of May and November in every year.

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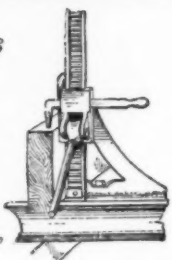
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GREENVILLE, MISS.



## RARE CHANCE.

## Machine Shop

OF  
(49) forty-nine SECOND-HAND Machine Tools, in Excellent Condition.

FOR SALE  
SINGLY.

FITCHBURG  
AND  
BLAISDELL

Makes.

COMPRISING  
LATHES,  
DRILLS,  
SHAPERS,  
PLANERS.

N. B.—Seven of these Tools were sold last week, order promptly or REPENT.

ADDRESS

PENNSYLVANIA MACHINE CO., LIMITED.

31 N. Seventh Street, Philadelphia, Pa.

(Successors to H. B. Smith Machine Co., Phila.)

## SECOND-HAND MACHINERY.

1 Planer, planes 16 ft. long, 62 in. x 24 in.  
1 Planer, planes 5 ft. 24x24 in.  
1 Planer, planes 6 ft. 32x25 in.  
1 Planer, planes 8 ft. 30x30 in.  
1 Planer, planes 4 ft. 24x24 in. [not screw cut]  
1 Engine Lathe, 9 ft. bed, 25 in. swing screw feed  
1 Engine Lathe, 12 ft. bed, 22 in. swing.  
1 Engine Lathe, 12 ft. bed, 22 in. swing.  
1 Lathe, Boring and Turning, 15 ft. bed, 24 in. swing.  
1 Engine Lathe, 20 ft. bed, 24 in. swing, A1.  
1 Engine Lathe, 11 ft. bed, 22 in. swing.  
1 14 ft. Vertical Boring Mill.  
1 26-in. Stevens' Pulley Lathe.  
1 Automatic Rack-Cutting Machine.  
1 20 in. stroke Friction Shaper.  
1 475 lb. Merrill Pattern Drop Hammer.  
1 11 ft. 24 in. Stover Dimension Planer.  
Send for list Second-hand tools.

## NEW YORK MACHINERY DEPOT,

Brooklyn Bridge Store, 16, New York.

## MACHINERY IN STOCK.

ENGINE LATHES.—62 inches x 22 feet;  
88 in. x 31 ft.; 50 in. x 20 ft.; 48 in. x 18 ft.; 42 in. x 12 ft.; 32 in. x 12 ft.; 29 in. x 15 ft.; 24 in. x 25 in. x 20 ft.; 1 each 24 x 10 ft., 12 ft. and 16 ft.; 1 each 17 in. x 6 and 8 ft.; 1 each 16 in. x 6, 8 and 10 ft.; 1 each 14 in. x 6 and 8 ft.; 6 12 in. x 5 ft.; 2 each 11 in. x 4 and 5 ft.; 2 each 10 in. x 4 ft., power or foot-power; 1 16 in. x 6 ft., 15 in. x 6 ft. 14 in. x 5 ft. Fox Monitor Lathes; 1 15 in. x 6 ft. Square Arbor Fox Lathe; 1 each 12 in. x 5 ft., 14 in. x 6 ft., 15 in. x 6 ft., 18 in. x 6 ft. Turret Lathe; 1 each 14 in. x 6 ft., 16 in. x 6 ft., 18 in. x 6 ft. and 8 ft. 21 in. x 8 and 10 ft. Engine Lathe Taper.  
1 Iron Planer, 16 in. x 16 in. x 3 ft.  
1 Planer, 20x20 in. x 4 ft. and 22x22 in. x 5 ft.  
1 " 24x24 in. x 5 ft. and 6 ft.  
1 " 30x30 in. x 6 ft.  
1 " 32x32 in. x 10 ft. 42x36 in. x 12 ft.  
1 " 36x36 in. x 10 ft.  
1 " 44x44 in. x 22 ft. and 50x50 in. x 17 ft.  
1 " 30x30 in. x 9 ft., with one head.  
1 " 42x42 in. x 12 ft., with two heads.  
Friction Shapers, 15 in., 22 in., 32 in.  
Crank Shapers, 12, 13, 16, 17, 20, 24 25 in. adj. at/ke.  
1 each Nos. 1, 2, 3, 4 Wire Feed Screw Machines.  
1 each Nos. 5 to 8 Screw Machine. Power Feed.  
1 each 2, 3, 4 and 6 Spindle Gang Drills.  
1 each Planers. 12 No. 2 Lincoln Pat. Millers.  
1 each Nos. 51, 52 and 53 Ferracute Presses.  
1 No. 3 Stiles & Parker Geared Press.  
1 No. 2 1/2 in. Fowler Press. 10 Foot and Power  
1 No. 1 Bliss Foot Presses. [Presses].  
12 Punching and Shearing Machines, assorted.  
1 Bolt Cutter, each 1/2 to 1 in. and 1/2 to 2 in.  
1 36 in. Gear Cutter.  
1 each 48, 60 and 72 in. Radial Drill.  
1 New Horizontal Boring Machine with facing attachment. Newark Mach. Tool Co. makers.  
1 48 in. Gear Cutter. 1 Power Mortising Machine.  
1 50 in. Pulley Lathe. 2 Profiling Machines.  
1 10x12 in. Valley Automatic Engine.  
1 36 in. Upright Drill. 3 Cam Cutters.  
Send for List of New and Second-Hand Machinery.

## PRENTISS TOOL &amp; SUPPLY CO.

59 S. Canal St., Chicago. 115 S. Liberty St., N.Y.

## LOCOMOTIVES,

Passenger and Freight

## CARS.

Both New and Second-Hand.  
IMMEDIATE DELIVERY.

Low Prices. Easy Terms.

## BARGAINS.—SECOND-HAND TOOLS.

We have the following second-hand Machine Tools, taken mainly in exchange for those of our manufacture. We will sell them low.  
17 in. x 8 ft. Putnam Lathe. Good Order.  
18 in. x 6 ft. Engine Lathe. Good Order.  
18 in. x 10 ft. Engine Lathe. Good Order.  
20 in. x 12 ft. Ames Lathe. Good Order.  
1 24 in. x 25 ft. L. W. Pond Lathe. Good Order.  
1 32 in. x 32 in. x 8 ft. and 9 ft. L. W. Pond Planer. G.O.  
24 in. x 16 ft. Lathe. Fair Order.  
10 in. Traveling Head Shaper. Good Order.  
24 in. x 24 in. x 4 ft. Planer. Good Order.  
32 in. x 32 in. x 8 ft. L. W. Pond Planer. Good Order.  
36 in. x 36 in. x 7 ft. Mattawan Planer. Good Order.  
1 Hendey 3-Spindle Drill Press. Good Order.  
1 24 in. Hendey Drill Press.  
1 24 in. B. G. P. F. Drill Press. Good Order.  
1 24 in. Plain Drill Press. Good Order.  
3 34 in. Drill Presses. Good Order.  
2 36 in. B. G. Drill Presses. Good Order.  
2 36 in. B. G. New Haven Drill Presses. G.O.  
1 2 1/2 in. Acme Single Drill Press. Good Order.  
2 750-lb. Steam Hammers (Bement, Miles & Co.) Good Order.

1 Punch, 18-in. throat, to punch 1 in. hole in 3/4-in. iron. A1 Order.  
1 Plain Milling Machine. Good Order.  
1 Miles Universal Miller, 6-in. Univ. chuck fitted. Good Order.

We have in stock or in process of construction at our Works a full line of Engine Lathes, Planers, Crank and Geared Shapers, Drill Presses, Improved Cabinet, Fox, Monitor, Square Arbor and Turret Chucking Lathes, Valve Millers, Cock Grinders, Slide Rests, etc.

Our Stock is constantly changing.  
Write for full particulars and prices.  
Outfits a specialty.

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MANUFACTURERS OF  
IRON AND BRASS WORKING MACHINERY.  
NEW YORK STORE, 64 CORTLANDT STREET.

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Store—S. E. Cor. Water & Market Sts., Pittsburgh.  
Boston Office, No. 23 and 25 Purchase Street.

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Twenty 40-inch Full Roller English Cards, Howard & Bullogh make, with 24-inch doffers, fast combs, excellent clothing and condition. May be seen at Richmond, Va.  
Two 40-inch two-beater English Loppers, in best condition, at Troy, N.Y.  
Full details and prices on application.

G. W. ARNOLD,  
552 Fulton Street, TROY, N.Y.

LIST OF DISPLACED WESTINGHOUSE STANDARD AUTOMATIC ENGINES, IN GOOD RUNNING ORDER, FOR SALE CHEAP BY THE SOUTHERN COTTON OIL CO., GIRARD NATIONAL BANK BUILDING, PHILADELPHIA, PA.

4 60 horse-power Engines, at New Orleans, La.  
1 150 horse-power and one 60 horse-power, at Montgomery, Ala.  
2 150 horse-power, at Atlanta, Ga.  
2 150 horse-power, two 45 horse-power and one 60 horse-power, at Savannah, Ga.  
2 45 horse-power, one 60 horse-power and one 150 horse-power, at Columbia, S.C.  
1 75 horse-power, at Houston, Texas.

ALSO LIST OF DISPLACED HYDRAULIC PUMPS, IN GOOD RUNNING ORDER, MADE BY THE SMITH & VAILE CO. AND NOW AT THE FOLLOWING MILLS OF THE SOUTHERN COTTON OIL CO:

Houston, 10; New Orleans, 8; Montgomery, 5; Atlanta, 5; Memphis, 5; Little Rock, 5, and Savannah, 1—in all 39.

## FOR SALE.

1 Complete set of Spoke Machinery, used not over four months. Cost \$1,500. Offer wanted.

2 BOLT HEADERS—Several improved Lewis; will make up to 1 1/2 inch; all guaranteed. Can see some of this make working in New York City.

3 No. "O" KNOWLES STEAM BOILER FEED PUMP, \$25.

4 10 NEW HAND-MADE ROAD MACHINES, two horse, perfect. Adapted to country road-making, scraping ice, etc. Send for circular and price.

5 ACME BOILER COMPOUND will do satisfactory work. Will send anywhere to be tried strictly on its merits. If satisfactory pay for it; if not, no charge. Send me trial order.

6 FIVE TONS ONE INCH OCTAGON STEEL, made for gun barrels. Buyer struck a hard spot and rejected same. A1 for bolts, braces, railings, etc. Can you use it?

7 50 BARRELS LIGHT AND MEDIUM MACHINERY OIL, guaranteed. Will ship anywhere. If satisfactory pay me 18 or 25 cents (according to which grade is shipped); if otherwise, return and I will pay freight both ways.

8 If you use steel, brass or bronze castings, send descriptions and secure my figures before placing order.

H. H. MANSFIELD,  
126 Liberty Street, NEW YORK

## Machinery, New and Second-Hand For Sale.

96 in. swing, 26 ft. bed, h'ds raised to sw'g 13 ft. A.  
50 in. swing, 30 ft. bed, for rolling mill forg's new.  
30 in. swing, 25 ft. bed, Pond Machine 1001 Co.  
Shafting Lathe. A1.  
32 in. swing, 12, 14, 16, 18 ft. beds. New.  
28 in. swing, 12, 14, 16, 18 ft. beds. New.  
21 in. swing, 10 and 12 ft. beds. New.  
20 in. swing 7 1/2 and 8 ft. beds. Ames. Good.  
18 in. swing, 8 ft. bed. Several makers.  
16 in. swing, 6 and 8 ft. beds. Several makers.  
15 in. swing, 6 and 8 ft. beds. Several makers.  
14 in. swing, 8 ft. bed. Several makers.  
15, 18 & 21 in. stroke. Crank shapers, step-toe. New.  
20, 26 & 30 in. stroke. G'rd shapers, step-toe. New.  
9 in. 16 in. stroke. Crank shapers. Good order.  
24 in. stroke. Geared shapers. Good order.  
20 in., 22, 24, 26, 30, 36 in. Drills. New & 2d-hand.  
24 in. x 4 ft., 5 ft., 6 ft. Planers  
26 in. x 6 ft. Planers. 33, 36 in. x 10 and 12 ft. Planers.  
34 in. x 12 in. x 21 1/2 ft. Planers.  
62 in. x 48 in. x 17 ft. Planers.  
72 in. x 48 in. x 33 ft. Planer, two heads.  
120 in. x 120 in. x 16 ft. Planers. Betts, two heads.  
40 h-p. Vertical Engine, N. V. S. S. P. Co. A1.  
11x18 horizontal slide valve Engine.  
1,100 and 3,000-lb. BEMENT STEAM HAMMER.  
Car axle-Lathe, Bement 1 1/2 and 1 3/4 Bolt Cutters.  
150 and 100-lb. MASSEY STEAM HAMMER.

Geo. Place Machine Co. 120 Broadway, N. Y.

## FOR SALE CHEAP.

## LARGE BOILER and PLATE BENDING ROLLS

13 feet between housing. Rolls 15 inches diameter, with reversible Engine. Will roll up to 1 1/2 inch plate. Built by Bement & Co., and ate equal to new.

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Bought, Sold and Exchanged.

COTTON, WOOLLEN AND KNITTING MACHINERY.  
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## 60 Tons of Wrought IRON.

No. 1 Railroad Scrap, on which I want bids subject to prior sale.

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LOCOMOTIVES,  
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CROSSINGS AND SWITCHES.  
Complete outfits, Power Plants, Belting, etc.  
Contracts taken. Write for prices.  
W. W. MARMADUKE,  
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## Steel Rails, Railway Equipment,

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## Rails at a Bargain.

We own and offer For Sale cheap 450 tons of Selected Second Hand, 30 lb. IRON RAILS in Chester County, Pa., all in good condition; also 132 tons of New, First Quality, 50 lb. STEEL RAILS at Steelton, Pa. Write or wire us.

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ESTABLISHED 1855.

## GEORGE PLACE,

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## STEEL RAILS.

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## OLD RAILS.

2,000 tons 53-pound Steel, 400 tons 35-pound Iron, 200 tons 30-pound Iron, all good order, with splices. Two six-driver 3-ft. gauge Engines. Four standard gauge Freight Engines.  
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FRIDGE, 1 ROOMING, SWITCHES AND FIXTURES.

IRON AND STEEL AXLES, CAR TRUCK CHAINWHEELS, WROUGHT IRON TURN-BUCKLES, LARKS AND PINS AND CAR COUPLERS.

HAR IRON AND STEEL, SHEET IRON AND STEEL, CORRUGATED IRON.

STEAM SHOVELS, BALLAST UNLOADERS, AND STEAM CRANES.

LOCOMOTIVES AND CARS OF ALL KINDS.

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## ROADS,

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**NEW YORK EQUIPMENT CO.**  
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**RAILWAY EQUIPMENT.**  
STEEL RAILS & TRACK SUPPLIES

## SOUTHERN LUMBER DIRECTORY.

A List of Leading Lumber Dealers and Manufacturers in the South.

This list of representative Southern lumber merchants and manufacturers is published for the benefit of those who desire to reach responsible houses in this branch of business in the South. Readers of the MANUFACTURERS' RECORD who have occasion to correspond with any of the firms mentioned below will confer a favor by mentioning this paper.

## Yellow Pine.

I. B. Gordon & Co., Alpine, Ala.  
Villa Rica Lumber Co., Anniston, Ala.  
J. R. Adams & Sons, Birmingham, Ala.  
Hawkins & Smith, Birmingham, Ala.  
C. T. Hughes & Co., Birmingham, Ala.  
Riddle & Simpson, Birmingham, Ala.  
Southern Supply Co., Birmingham, Ala.  
Marbury & Jones, Bozeman, Ala.  
D. W. & U. Blacker, Brewton, Ala.  
W. W. Weaver, Castleberry, Ala.  
J. A. Dudley, Clanton, Ala.  
O. A. Duke, Clanton, Ala.  
L. B. Wells, Clanton, Ala.  
H. C. Higman & Co., Decatur, Ala.  
Dunham Lumber Co., Dunham, Ala.  
Gadsden Lumber Co., Gadsden, Ala.  
Tuscaloosa Lumber Co., Hull, Ala.  
Bay City Lumber Co., Mobile, Ala.  
E. B. Vaughan, Mobile, Ala.  
Alabama Lumber Syndicate, Montgomery, Ala.  
S. B. Allen & Co., Montgomery, Ala.  
W. A. Drives & Co., Montgomery, Ala.  
Moore, Kirkland & Co., Montgomery, Ala.  
Wagar Lumber Co., Wagar, Ala.  
W. W. Wadsworth, Wadsworth, Ala.  
Arkadelphia Lumber Co., Arkadelphia, Ark.  
Empire Lumber Co., Ashton, Ark.  
Long Bell Lumber Co., Buckner, Ark.  
Cotton Belt Mill Co., Cotton Belt, Ark.  
Eagle Lumber Co., Eagle Mills, Ark.  
Red River Lumber Co., New Lewisville, Ark.  
A. J. Nelmeyer Lumber Co., Waldo, Ark.  
Fordyce Lumber Co., Fordyce, Ark.  
The Florida Phosphate Co., Ltd., Phosphoria, Fla.  
J. S. Belts & Co., Ashburn, Ga.  
Gress Lumber Co., Atlanta, Ga.  
Wilson Coal & Lumber Co., Atlanta, Ga.  
Donalson Lumber Co., Donaldsonville, Ga.  
Perkins Manufacturing Co., Augusta, Ga.  
Stillwell, Millen & Co., Savannah, Ga.  
E. B. Hunting & Co., Savannah, Ga.  
Georgia Lumber Co., Savannah, Ga.  
F. F. Putney, Hardaway, Ga.  
Charles Bewick & Co., Hazelhurst, Ga.  
Alderfer & Bull, Isabella, Ga.  
Hogan & Winger, Kensington, Ga.  
J. A. Williams, Sumner, Ga.  
A. J. Duncan & Co., West Bowersville, Ga.  
W. E. Mayne, Carpenter, Ky.  
P. Hendrickson, Conant, Ky.  
Perkins & Miller Lumber Co., Ltd., Westlake, La.  
Lock-Moore & Co., Ltd., Westlake, La.  
R. J. Aycock, Longstreet, La.  
C. P. Brasher, Marthaville, La.  
Joseph Horst, Maugansville, Md.  
Elliott, Crawford & Co., Myrtle, Miss.  
P. B. Myers & Son, Myrtle, Miss.  
Ocean Springs Lumber Co., Ocean Springs, Miss.  
B. J. Cansey, West, Miss.  
Cary E. Spence, Pass Christian, Miss.  
Keystone Lumber & Imp. Co., Bogue Chitto, Miss.  
J. S. Blackburn, Ellisville, Miss.  
W. L. Rankin & Bro., Shannon, N. C.  
A. E. Rogers, Mullins, S. C.  
R. F. Moss, Booker, Va.  
The A. F. Withrow Lum. Co., Millboro Depot, Va.  
U. B. Simpson & Son, Narva, Va.

## North Carolina Pine.

Page Lumber Co., Aberdeen, N. C.  
The Greenville Land & Imp. Co., Greenville, N. C.  
Gulfport Lumber Mfg. Co., Greensboro, N. C.  
Goldsboro Lumber Co., Goldsboro, N. C.  
G. Vyne & Son, Wilkesboro, N. C.  
John Hickson & Co., Lynchburg, Va.

## Cypress.

Morris & England, Keo, Ark.  
Cypress Lumber Co., Sherrill, Ark.  
T. O. Wilson Lumber Co., Tillar, Ark.  
Nuchner & Brown, Peach Orchard, Ark.  
Moline Lumber Co., Helena, Ark.  
J. M. Milburn & Bro., Greenway, Ark.  
J. C. McCain, Greenway, Ark.  
W. R. Emerson, Emerson, Fla.  
J. C. Burleigh, Midland, Fla.  
F. S. Bamberg, Jasper, Fla.  
S. J. Temple, Temple's Mills, Fla.  
J. P. Little, Sumner, Fla.  
Geo. H. Barker, Waldo, Fla.  
A. A. Bunnell, Raulerson, Fla.  
Windemere Land & Lumber Co., Windemere, Fla.  
Kelly, Cosby & Co., Jug Tavern, Ga.  
Dietrich & Dopson, Lenox, Ga.  
W. T. McArthur, McArthur, Ga.  
W. H. Moxley & Co., Macon, Ga.  
W. R. Peterson & Co., Wadley, Ga.  
Lawless & Kyle, Franklin, La.  
Louisiana Cypress Lumber Co., Harvey, La.  
Callahan & Lewis Mfg. Co., Patterson, La.  
McEwen & Murray, New Orleans, La.  
Hanson & Smith, Wilmington, N. C.

J. C. Fulton, Aransas Pass, Texas.  
Calcasieu Lumber Co., Austin, Texas.  
M. T. Jones & Co., Childress, Texas.  
J. H. Folkey, Korky, Texas.

## Hardwoods.

North Alabama Lumber Mfg. Co., Bridgeport, Ala.  
Bridgeport Lumber Co., Bridgeport, Ala.  
Hill & Mitchell, Center Star, Ala.  
W. A. Koepfel, Coaling, Ala.  
Decatur Lumber Co., Decatur, Ala.  
H. S. Freeman, Decatur, Ala.  
Black Warrior Lumber Co., Demopolis, Ala.  
Alabama Lumber & Mfg. Co., Gurley, Ala.  
G. Vaughan, Hollywood, Ala.  
C. G. Huffman, Hollywood, Ala.  
Clifton & Hendrix, Jasper, Ala.  
Elliott & Carter, Jasper, Ala.  
W. M. Beatty, Austin, Ala.  
J. W. Ray, Arkadelphia, Ark.  
Desha Lumber Co., Arkansas City, Ark.  
Batesville Lumber Co., Batesville, Ark.  
Russell & Elder, Beebe, Ark.  
South'n Hardwood Lumber Co., Black Rock, Ark.  
E. M. Ford Land & Timber Co., Gilmore, Ark.  
Kelley & Wells Lumber Co., Newport, Ark.  
Cream City Lumber Co., Lambertville, Ark.  
J. M. Meffert, Lowell, Fla.  
Ray & Geise, Brownwood, Ga.  
Altamaha Cypress Lumber Co., Brunswick, Ga.  
Montford & Mitchell, Butler, Ga.  
Glasgow & Henderson, Casville, Ga.  
Green & Eshum, Clay Hill, Ga.  
W. H. Allen, Cordele, Ga.  
Greer Bros., Ada, Ga.  
D. T. Harris, Dixon, Ga.  
W. T. Opie, Dover, Ga.  
A. J. McMullen, Hartwell, Ga.  
Matthews & Anderson, Knoxville, Ga.  
R. W. Ballard, Newton Factory, Ga.  
O. W. Wadley, Rogers, Ga.  
L. T. Brawner, Adairville, Ky.  
G. W. Hummer, Adairville, Ky.  
W. Conn & Son, Bedford, Ky.  
Snider Bros., Berea, Ky.  
Gibson & Hale, Flat Lick, Ky.  
J. L. Naylor, Wickliffe, Ky.  
Samuel Anglen, Lafayette, Ky.  
H. E. Miller, Lewisburg, Ky.  
Fetter Cochran & Co., Louisville, Ky.  
J. C. Williamson, Mouth of Pond, Ky.  
The Cumberland Co., Middlesborough, Ky.  
Waters & Bringham, Pineville, La.  
J. H. McBride, Winnfield, La.  
The Loomis & Hart Mfg. Co., Chattanooga, Tenn.  
E. Cravens, Bagwell, Texas.  
Jas. M. Williams, Charlottesville, Va.  
Smith & Co., Reedy Ripple, W. Va.  
Shelly & Wirgman, Romney, W. Va.

## Shingles.

A. C. Danner, Mobile, Ala.  
J. Bradley, Hartsell's, Ala.  
Concuh & Patsaliga Lumber Co., Luverne, Ala.  
G. N. Buchanan, Luverne, Ala.  
J. D. Cameron & Son, Mobile, Ala.  
Mobile Shingle Co., Mobile, Ala.  
Mountain & Sons, Mobile, Ala.  
C. G. Richards & Son, Mobile, Ala.  
Stewart & Butt, Mobile, Ala.  
Gulf States Lumber Co., Montgomery, Ala.  
D. Goulet & Co., Black Rock, Ark.  
F. McKay, Black Rock, Ark.  
Camden Shingle Mill Co., Camden, Ark.  
Price Lumber Co., Paragould, Ark.  
Carey & Ollinger, Bagdad, Fla.  
A. L. Wellman & Co., Beresford, Fla.  
Florida Shingle Mills, Brooksville, Fla.  
W. Springstead & Son, Brooksville, Fla.  
Mearns Shingle Mill, Davenport, Fla.  
Wm. A. McCann, Jacksonville, Fla.  
A. G. Russell, Oviedo, Fla.  
Little & Chapman, Rosewood, Fla.  
Atlanta Lumber Co., Atlanta, Ga.  
P. G. Grant, Atlanta, Ga.  
T. E. Collier, Cordele, Ga.  
King & Bursch, Hawkinsville, Ga.  
Varbrough & Perry, Fullington, Ga.  
Ino. Akers & Co., Scotland, Ga.  
Bailey Bros., Toccoa, Ga.  
Mayfield Shingle Co., Wishart, Ga.  
Worth Lumber Co., Worth, Ga.  
G. W. Clere, Coalton, Ky.  
Monroe Smith, McKinney, Ky.  
The J. H. Poe Shingle Co., Lake Charles, La.  
Harris & Thornton, Chattanooga, Tenn.  
L. Miller Shingle Co., Orange, Texas.  
Kizer Lumber Co., Texarkana, Texas.  
Fritz Sitterding, Richmond, Va.  
Gurley & Rogers, Norfolk, Va.  
Nottingham & Wrenn, Norfolk, Va.  
Ino. L. Roper Lumber Co., Norfolk, Va.

## Staves and Heading.

F. W. Sharp & Co., Larkinsville, Ala.  
J. R. Adams & Son, Longview, Ala.  
Montgomery Stave & Eldg. Co., Montgomery, Ala.  
J. C. Sheets & Co., Montgomery, Ala.  
P. V. Deland, Black Rock, Ark.  
Hammitt & Bailey Stave Co., Greenway, Ark.  
Arkansas Stave Works, Greenway, Ark.  
J. F. Hasty & Son, Paragould, Ark.  
G. M. Rosegrant, Paragould, Ark.  
Wilson Bros., Piggott, Ark.  
Backus Bros., Pine Bluff, Ark.  
Little Rock Cooperage Co., Little Rock, Ark.  
Tampa Lumber Co., Tampa, Fla.  
Hagan & Platt, Pine Level, Fla.

R. H. Brewer, Cedartown, Ga.  
Georgia & Tennessee Lumber Co., Laconte, Ga.  
F. H. Waring & Co., Cement, Ga.  
Allen & Briggs, Bardwell, Ky.  
F. B. Freeman, Cumberland Falls, Ky.  
Johnson & Overshiner, Hopkinsville, Ky.  
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Edward Farley, Paducah, Ky.  
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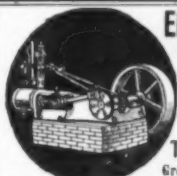
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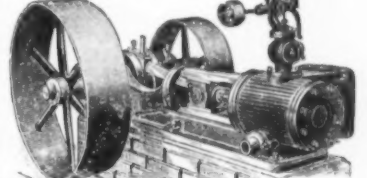
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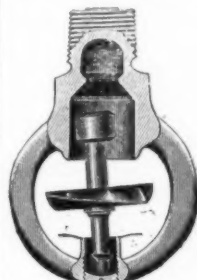
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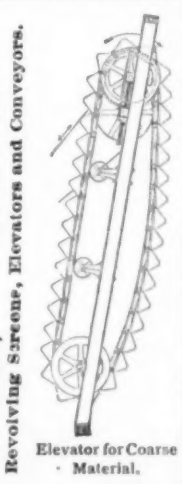
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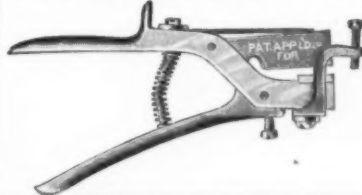
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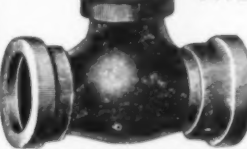


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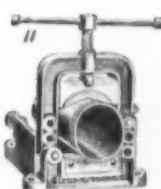
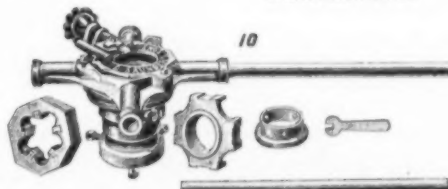
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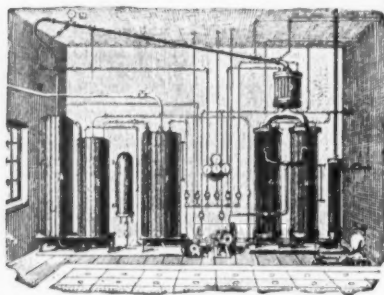
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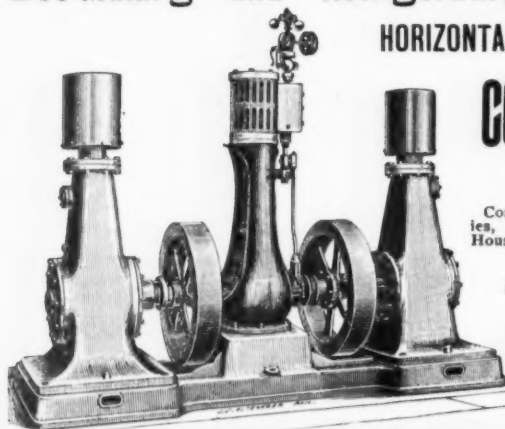
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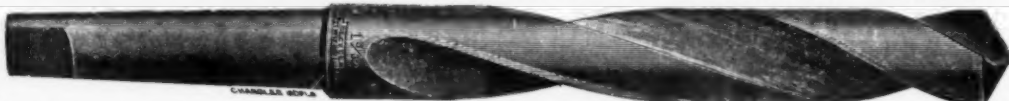
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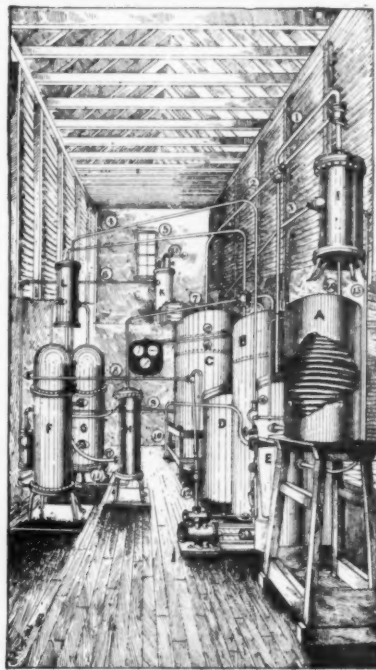
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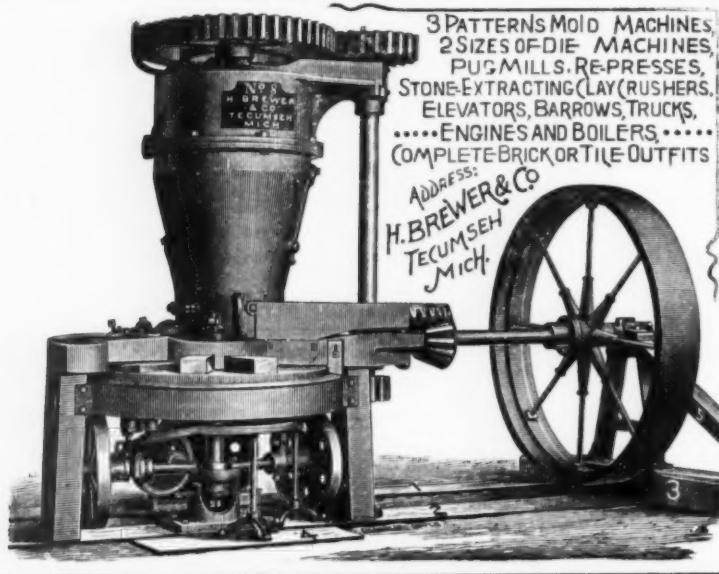
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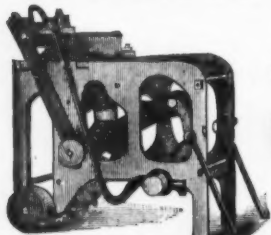


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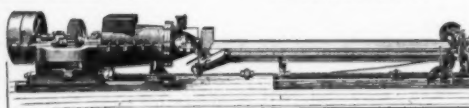
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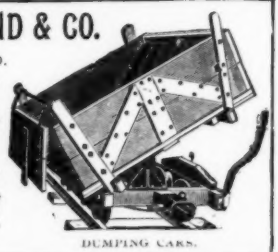
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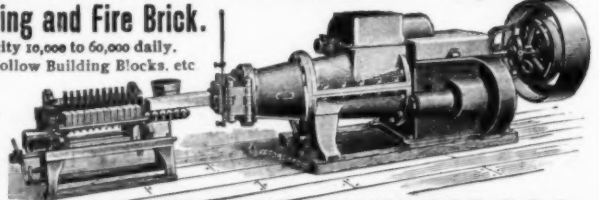
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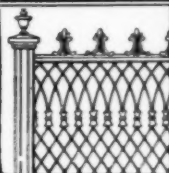
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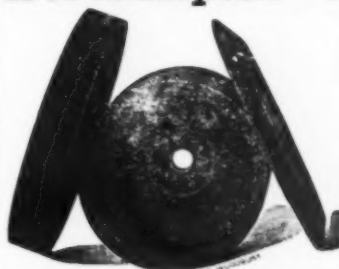
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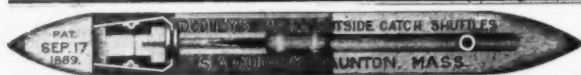
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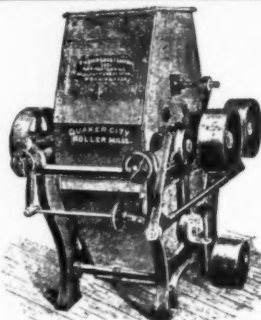
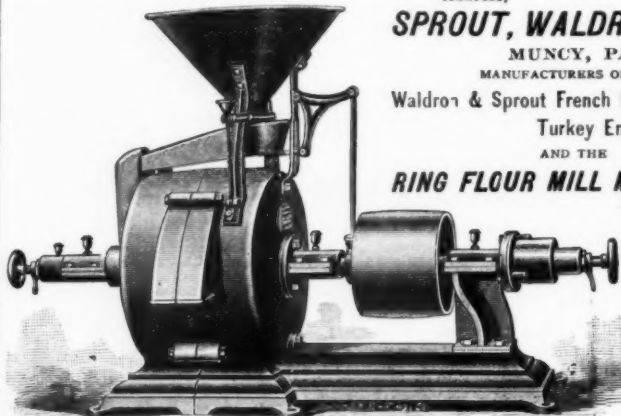
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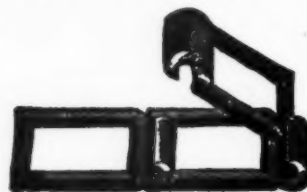
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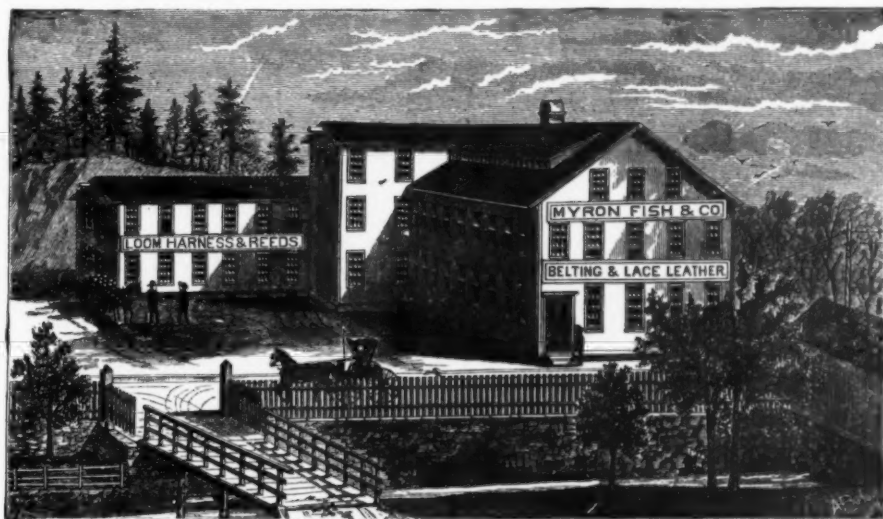
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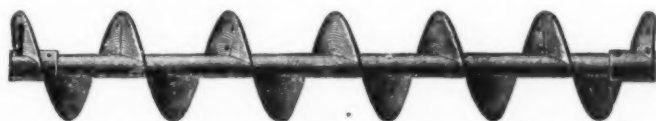
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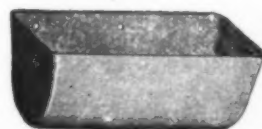
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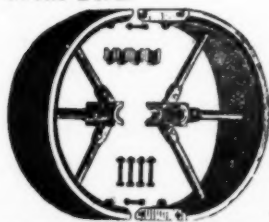
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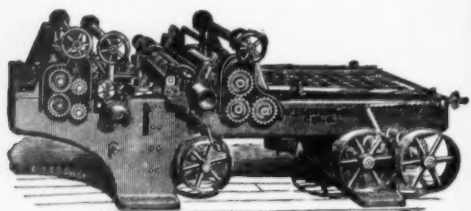
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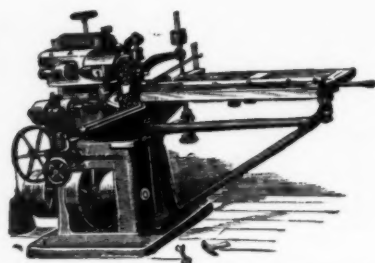
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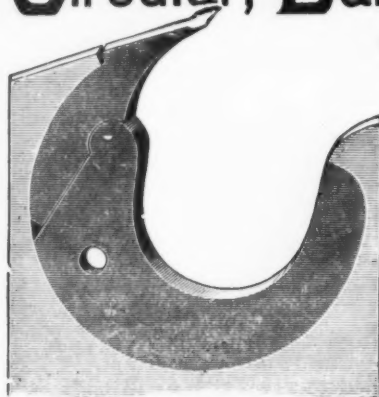
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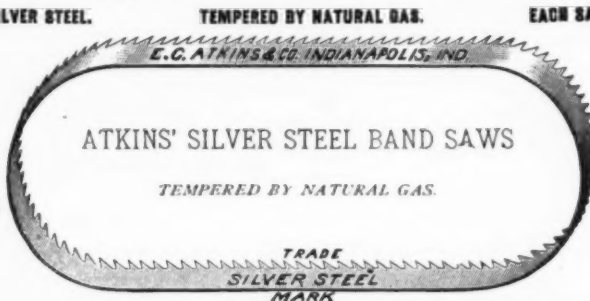
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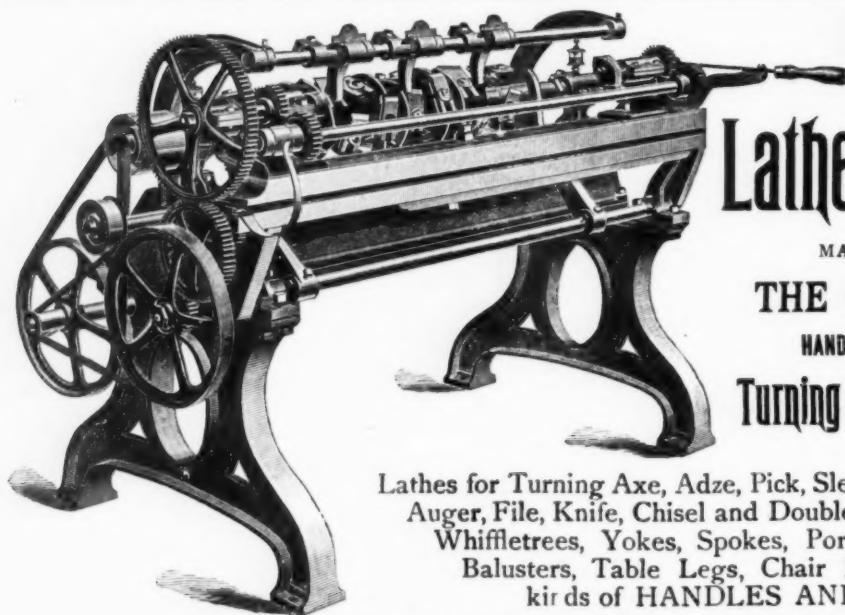
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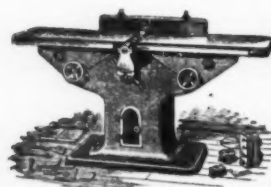
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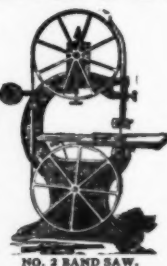
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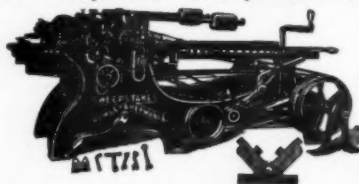


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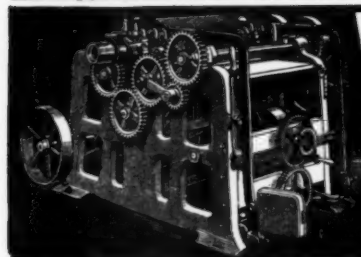
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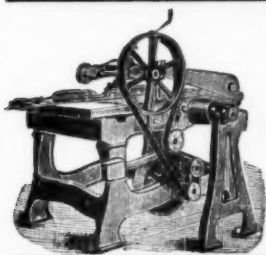
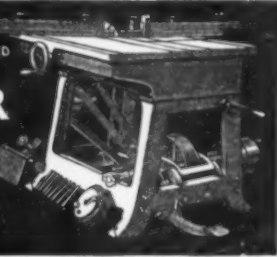
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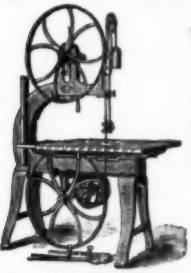
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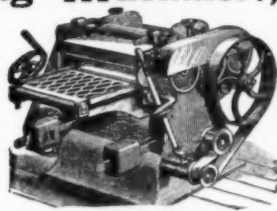
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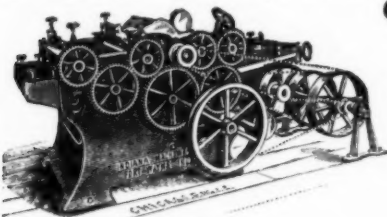
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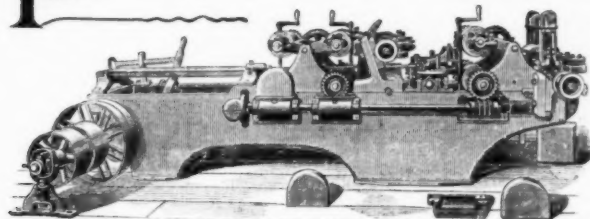
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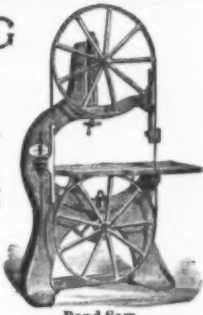
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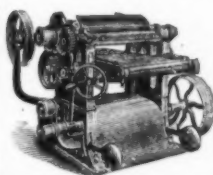
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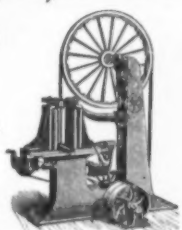
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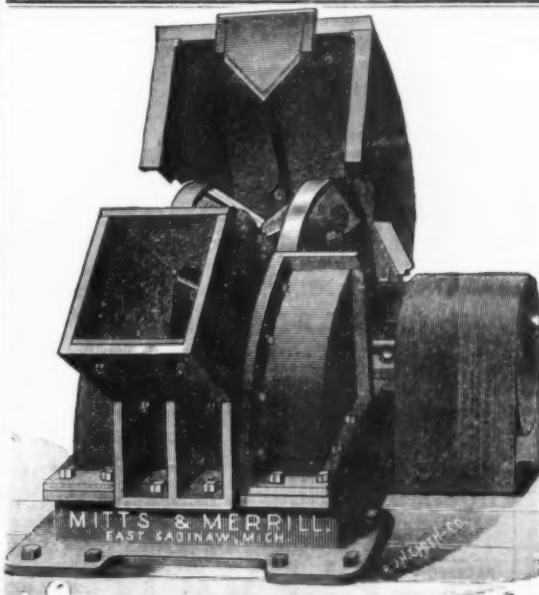
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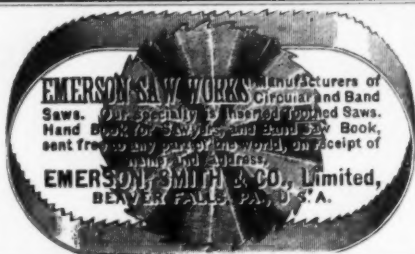
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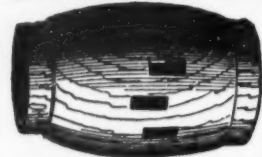
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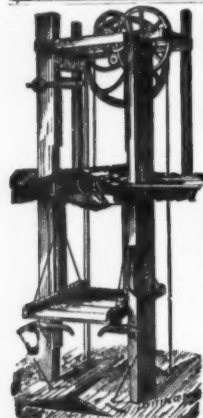
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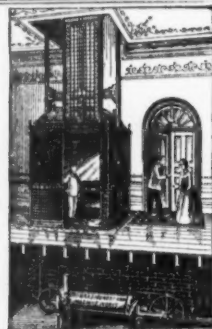
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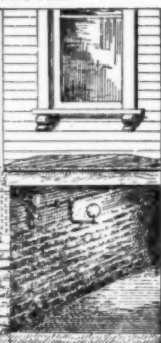
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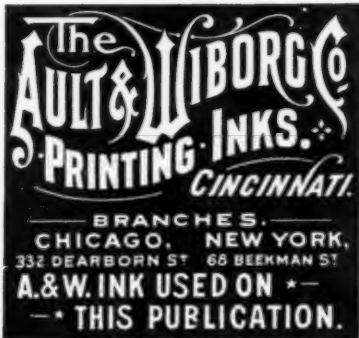
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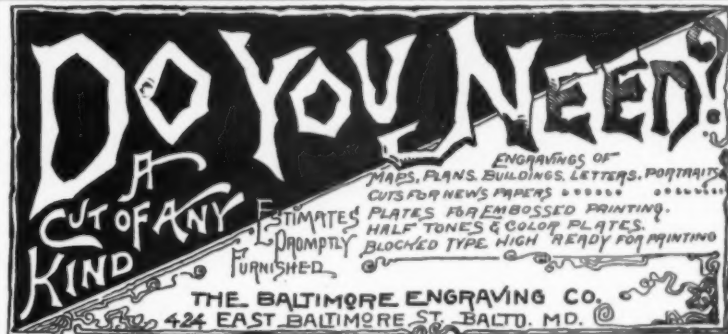
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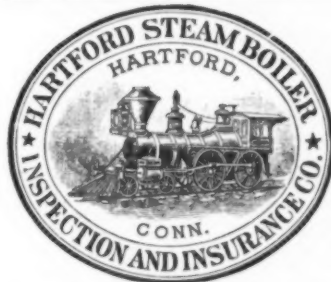
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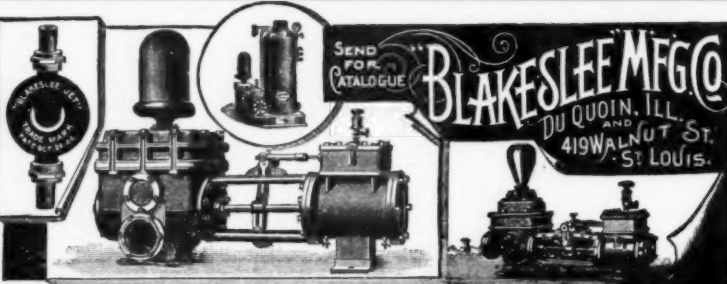
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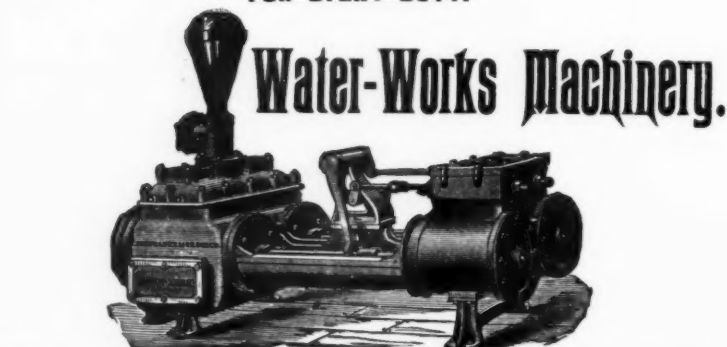
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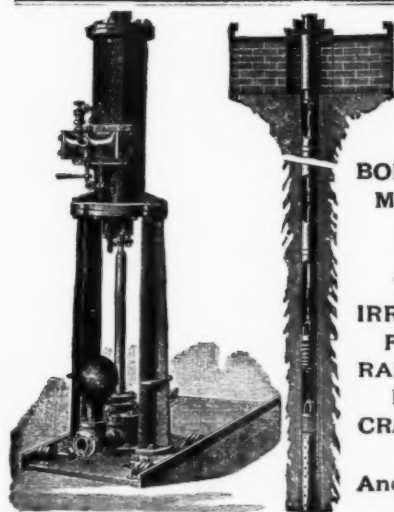


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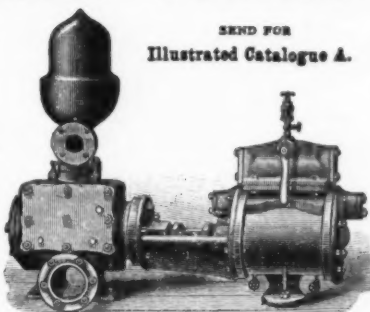




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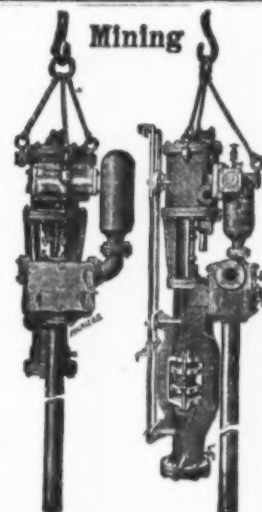
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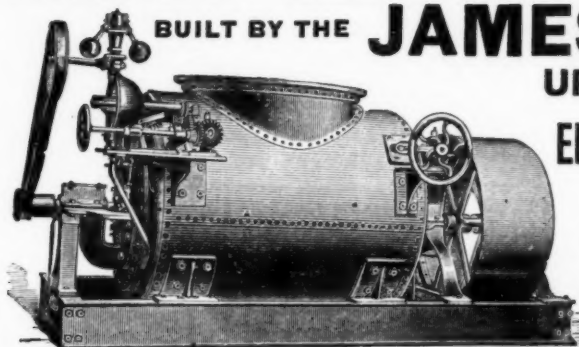
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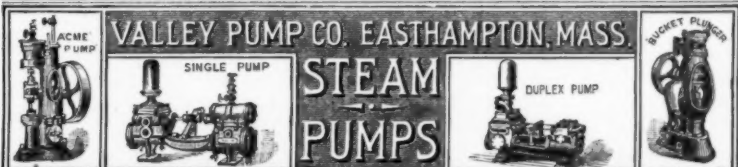
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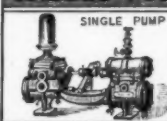


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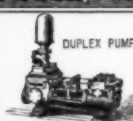
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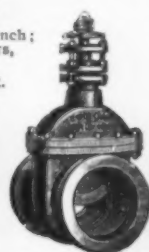


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OPPORTUNITIES, RESOURCES, ASSISTANCE.—The Burlington Route reaches with its own line nearly every place of note in Illinois, Iowa, Minnesota, Missouri, Nebraska, Kansas, Dakota, Wyoming, Colorado, and has direct connections to every point in America.

Every conceivable resource in the shape of raw material, such as Iron Ore, Coal, Copper, Zinc, Tin, Gold and Silver and other metals; thousands upon thousands of miles of forests, containing almost unlimited quantities of Hard and Soft Woods; Clays of all kinds and for every purpose; inexhaustible stone quarries of every description; immense quantities of Tan Bark, Flax Straw, in fact everything that is found in the ground or above the ground can almost surely be found somewhere on the vast Burlington Route.

By Looking at the Map you will see that the Burlington reaches with its own rails nearly every Commercial Center in the West. You will also discover by taking a second glance at the map that no other railroad in the world covers such a vast territory filled with nature's wealth, and tributary to every point in the world.

MANUFACTURERS OR OTHERS desiring any information regarding Raw Material, Accessibility to Markets, Best Cities and Towns to locate in, what these places offer as inducements, etc., will do well to write for information.

There are more Manufacturing Industries located on the lines of The Burlington Route than on any other railroad in the United States.

The interests of The Burlington Route and those of a Manufacturer or Locator Upon its Line are Mutual.

THE INDUSTRIAL DEPARTMENT of this road possesses the information you want. If not, it will procure it for you without any cost to you. This department is as complete as any Railroad Industrial Department in the world. Will appreciate any correspondence requesting information.

This department will make the work and worry of seeking a suitable and advantageous location easy for you.

For detailed information and for large country maps of the territory covered by the Burlington lines, write to or call upon GEO. H. ROSS, Superintendent Industrial Department Burlington Route. General Offices, Adams and Franklin Streets, Chicago.

## LOCATIONS FOR FACTORIES

Chicago, Milwaukee & St. Paul Railway Co.

## INDUSTRIAL DEPARTMENT.

The Chicago, Milwaukee & St. Paul Railway Company desires to have the raw material on its 6,150 miles of road in Illinois, Wisconsin, Northern Michigan, Iowa, Missouri, Minnesota, South Dakota and North Dakota utilized.

In addition to the vast agricultural resources, its territory comprises forests of hard and soft wood, mines of iron and other metals, coal and other minerals, quarries, clays of all kinds, tan-bark, flax and other products. Water-powers (both river and artesian) are also still available.

A number of new factories have been induced to locate—largely through the instrumentality of this Company—at enterprising towns on its lines.

As the interest of the Company is to secure the location of industries at places where the surroundings will insure their permanent success, the information furnished a particular industry is pertinent and reliable.

The people on the whole system are one live and thriving community of business men in whose midst it is safe and profitable to settle. Local capital is being largely invested in local factories, and taken as a whole, the country through which the route runs is commanding attention as the coming industrial territory of the United States. Solid concerns, manufacturers, large or small, who thoroughly understand their business are sought for at suitable points on the road.

Individuals or companies wishing to embark capital in Western industry can find a profitable field.

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On and after MONDAY, February 20, 1892, the steamers of this line leave Baltimore daily (Sunday excepted) at 5 P. M. for West Point, Richmond and the South, arriving at Richmond at 9.10 A. M., connecting with trains of the Richmond & Danville System. Steamer leaving Mondays, Wednesdays and Fridays calling at Gloucester Point and Allmond's Wharf; steamer leaving Tuesdays, Thursdays and Saturdays calling at Yorktown and Clay Bank. Through tickets and bills of lading issued to all points of the Richmond & Danville System. Way freight must be prepaid. Fare to Richmond, first class, \$2.00, second class, \$1.50. Tickets sold and baggage checked at Geigan & Co.'s, 205 East Baltimore Street.

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STORRA-LEE, 1734, BAILEY.

DEERHILL, 1733, BAINBRIDGE.

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Consignments solicited to all points in United Kingdom and Continent of Europe.

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# NORTH WILKESBORO,

## NORTH CAROLINA,

One of the Conspicuous Successes of the Year in Town Building.  
Presents the Following Record:

Population March 4, 1891, actual count, 48.

Population March 4, 1892, actual count, 348.

Gain in one year 625 per cent.

Townsite purchased November 11, 1890; act of incorporation passed by the Legislature, March 4, 1891; first lot sold at private sale, May 12, 1891. Within the first year of its existence ten miles of streets have been graded, and \$22,000 spent in public improvements. Where prior to March 4, 1891, there was only a farm settlement without pretensions to being even a village, there is to-day a thriving, busy, growing, trading and manufacturing center, with

A Large Well-Kept Hotel,  
The Bank of North Wilkesboro, \$40,000 Capital,  
A large Livery and Sale Stable,  
Two Large Wholesale Stores,  
One Hardware Store,  
One Furniture Store,  
Ten General Merchandise Stores,  
Three Saw Mills, Sash and Blind Factories,  
One Foundry and Machine Shop,  
A Handsome, Well-Edited, Home Print Newspaper, The North Wilkesboro News,  
One School,  
Two Churches Under Way,

Two Brick Yards in operation, and a number of other enterprises practically secured.

Arrangements are about completed for a Woolen Mill.

A large iron front brick block, containing Bank Building, two Store Rooms, Opera House, and Printing Office; A graded School Building and an Iron Bridge across the Yadkin River, in the Eastern part of town, will be completed during the spring and summer.

Turnpike roads to Tennessee and Virginia are about completed; county roads leading into town are being improved and numerous good new ones built, with the intention of making this the center for all the wagon trade of this section.

A tobacco warehouse for the sale of the high grade leaf of this district will be built during the summer, so as to give a home market for the tobacco crop that will be grown this year.

*Compare this record with that of any other new town you have heard of during the past dull season.*

## NORTH WILKESBORO,

Is 75 miles west of Winston-Salem, at the present terminus of the Northwestern North Carolina Railroad, which when ultimately completed to Bristol, Tenn., will give the shortest route between Norfolk and Cincinnati. North Wilkesboro is the most important trading point between Winston-Salem and Bristol, and is in the center of the great undeveloped mineral and timber district of Northwestern North Carolina, being by United States Postal Map on an air line 75 miles southeast of Bristol, 45 miles east of Cranberry, N. C., 40 miles north of Statesville, 45 miles northeast of Hickory, 90 miles northeast of Asheville, 45 miles southeast of Mt. Airy, and 80 miles south of the Norfolk & Western Railroad, in the valley of the Yadkin, between the Brushy Mountains on the South and the Blue Ridge on the North. Climate, healthfulness, water, drainage and location unsurpassed by any town in North Carolina.

The townsite consists of 1,088 acres, located, by the way on a farm originally owned by General John B. Gordon's grandfather. The first public auction sale of lots was held December 2, 1891, and 188 lots were sold. Purchasers have in many cases been able to resell at a handsome profit. The company has sold 50 lots at private sale since then, on many of which houses are now being erected. It is a significant fact that among the business buildings erected a large per cent. are substantial brick structures, while for architectural beauty and cost many of the residences are much superior to those usually found in a town so young.

At the second auction sale, May 11th, 1892, 35 business lots and 44 residence lots sold for \$16,490, an average of \$8.35 per front foot, which is \$2.53 per front foot (or 44 per cent.) more than the average at the sale last December, which was the best sale made in North Carolina during last year. Since the sale, a contract has been closed for the location of another large saw mill, planing mill, sash, door and blind factory combined, which will do a large shipping business. A contract is closed for the location of extract works with a capital stock of \$300,000. The plant will cost \$125,000 and will cover six acres of land. Twelve families from the North will move down. The company will erect a large electric-light plant in connection with the extract works. North Wilkesboro will get there and will not be long doing so.

Through the townsite runs a stratum of serpentine stone, 200 feet in width, and also a bed of iron ore equal in quality to that of Cranberry. The Town Company also owns 4,100 acres of mineral, granite and timber lands in Wilkes County. It is probable that the work of developing the great mineral and timber interests of the section will be commenced in a short time, and on an extensive scale.

*Sites will be donated and stock subscribed to such manufacturing enterprises as may be advantageously located here.*

The policy of the Company is a most liberal one in this respect, it being determined to aid all legitimate enterprises to any reasonable extent. There are 328 miles of water courses within the borders of Wilkes County, furnishing to the vicinity of North Wilkesboro a water power as great as Fall River. The climate, while not moist, is neither harsh nor dry, and is especially suitable to the spinning of fine cotton yarns, such as cannot be made in the extreme South or North. There is also a fine opportunity here for bleacheries, to the establishment of which at Southern points there is a tendency at present. As they can't go where sluggish streams, impregnated with vegetable matter, abound, the quick flowing streams of clear mountain water, so numerous about North Wilkesboro, afford everything desired. Numerous other industries will do well at North Wilkesboro, and will be most substantially encouraged to locate there.

Capitalists, Home Seekers, Health Seekers, Manufacturers of wood and iron, and many other industrial workers may well investigate North Wilkesboro's advantages.

The above-described townsite and other property belongs to the Winston Land & Improvement Co., which was chartered by act of Legislature, session of 1887; ratified March 4, 1887, chapter 82. Authorized capital \$1,000,000 Present capital stock \$125,000, all subscribed and paid up.

**OFFICERS**—G. W. HINSHAW, President, of Hinshaw & Medearis, Wholesale Merchants; Vice-President People's National Bank, Winston, N. C. DR. W. L. BROWN, Vice-President, of Brown Brothers, Tobacco Manufacturers, Winston, N. C. W. F. TROGDON, Secretary and Treasurer, North Wilkesboro, N. C.

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The Norfolk & Western's direct line to Washington will be built from Front Royal.

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A WIDE RIVER WITH SWIFT CURRENT FURNISHES WATER POWER  
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Front Royal is a Prosperous Town, with an Extensive Mercantile Business  
and Many Manufacturing Enterprises in Operation and  
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FRONT ROYAL. VIRGINIA.

FOR "CLASSIFIED INDEX" SEE PAGES 3, 5 AND 7.

\* Not in this issue









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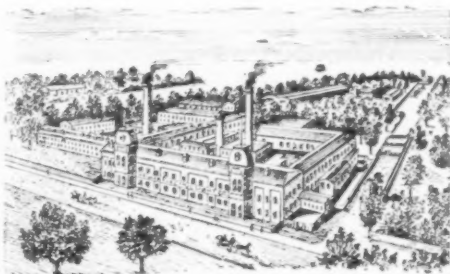
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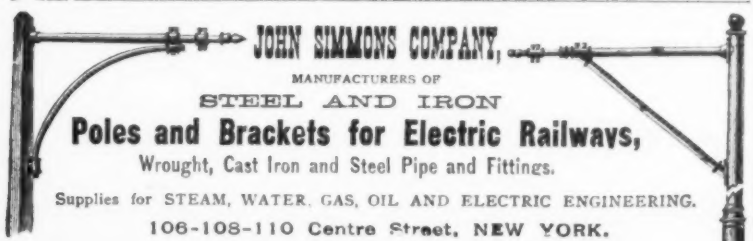
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APPENDICES: Appendix A. Electric Railway vs. Telephone Decisions. B. Instructions to Linemen. C. Engineer's Log Book. D. Classification of Expenditures of Electric Street Railways. E. Concerning Lightning Protection, by Prof. Elhu Thomson.

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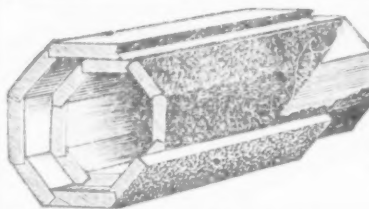
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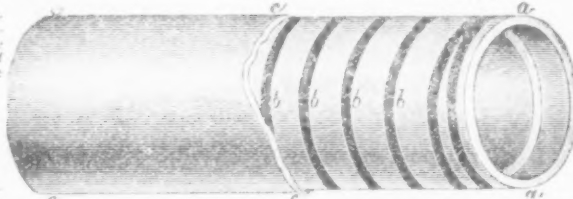
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